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COMPUTERS IN INFORMATION SCIENCES: COMPUTER COMPONENTS.(U)
OCT 76

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1 OF 4
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A031 200



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AD-A031 200

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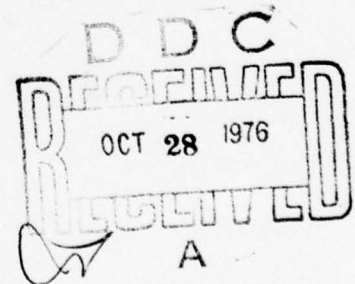
**COMPUTERS INFORMATION SCIENCES:
COMPUTER COMPONENTS**

A DDC BIBLIOGRAPHY

**DDC-TAS
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Alexandria, Va. 22314**

OCTOBER 1976

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This bibliography is a compilation of citations on Computers In Information Sciences; Computer Components. Discussed are computer memory devices, data storage systems, arithmetic and logic units, and punched card equipment. Corporate Author-Monitoring Agency, Subject, Title and Personal Author are included.			

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107 200

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Item 19 KEY WORDS (Cont'd)

Computer Graphics
Input Output Devices
Arithmetic Units
Central Processing Units
Data Processing Terminals
Computer Communications
Data Processing Equipment

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UNCLASSIFIED	
JUSTIFICATION	
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DISTRIBUTION/AVAILABILITY	
Dist.	
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FOREWORD

This bibliography contains 265 unclassified and unlimited citations on *Computers In Information Sciences: Computer Components*.

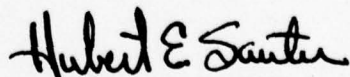
Citations were taken from entries processed into the Defense Documentation Center's data bank during the period of June 1972 to July 1976.

This report updates DDC report bibliography on *Computers In Information Sciences: Computer Components*, AD-761 970, DDC-TAS-73-25, dated June 1973.

Individual entries are arranged in AD number sequence under the heading AD Bibliographic References. Computer generated indexes of Corporate Author-Monitoring Agency, Subject, Title and Personal Author are provided.

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HUBERT E. SAUTER
Administrator
Defense Documentation Center

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TITLE	T-1
PERSONAL AUTHOR	P-1

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 736 895 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

A PARALLEL ARITHMETIC UNIT, (U)

NOV 72 8P AVAEV, A. V. ;VIZUN, I. D.
;GOLOVINA, M. A. ;LAUT, V. N. ;SOKOLOV, A.
A. ;
REPT. NO. FTD-HT-23-406-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF PATENT (USSR)
242 498 P 1-13 1969, BY J. MILLER.

DESCRIPTORS: (*DIGITAL COMPUTERS, *PATENTS), LOGIC (U)
CIRCUITS, SHIFT REGISTERS, USSR
IDENTIFIERS: *ARITHMETIC AND LOGIC UNITS, (U)
TRANSLATIONS

A PARALLEL ARITHMETIC UNIT FOR DIGITAL COMPUTERS IS
FITTED WITH TWO PAIRS OF REGISTERS, EACH DIVIDED INTO
A DIGIT SUM REGISTER AND A DIGIT TRANSFER REGISTER.
EACH REGISTER HAS ON ITS INPUT AN AND GATE
WHICH LIES IN A FEEDBACK CIRCUIT TO INPUT ELEMENTS OF
THE REGISTER IN THE OTHER PAIR, AN AND GATE TO
CARRY OUT THE LOGIC OPERATIONS, AND A THREE INPUT
ADDER. THE CLEAR SIGNALS ARE PASSED TO EACH AND
GATE AND ADDER THROUGH CONTROL WIRES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 747 134 9/2 14/3
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

A SURVEY AND ANALYSIS OF HIGH DENSITY
MASS STORAGE DEVICES AND SYSTEMS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUL 72 47P SCHNEIDEWIND, NORMAN F. ;
SYMS, GORDON H. ; GRAINGER, THOMAS L. ; CARDEN,
ROBERT J. ;
REPT. NO. NPS-555572071A
PROJ: FMSO-P0-2-2099

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA STORAGE SYSTEMS, MILITARY
REQUIREMENTS), (*MEMORY DEVICES, REVIEWS), MAGNETIC
TAPE, MAGNETIC RECORDING SYSTEMS, VIDEO SIGNALS, OPTICAL
EQUIPMENT, PHOTOGRAPHIC RECORDING SYSTEMS,
STEREOPHOTOGRAPHY, INFORMATION RETRIEVAL, ELECTRON
BEAMS, RELIABILITY, PROTECTION, CORRECTIONS (U)
IDENTIFIERS: OPTICAL STORAGE DEVICES, PHOTOSCOPIC
STORAGE, HOLOGRAPHIC INFORMATION STORAGE, VIDEO TAPES,
COMPUTER STORAGE MANAGEMENT (U)

A SURVEY AND ANALYSIS HAS BEEN MADE OF HIGH DENSITY
MASS STORAGE SYSTEMS FOR THE NAVY FLEET
MATERIAL SUPPORT OFFICE. THE PURPOSE OF THE
PROJECT WAS TO SURVEY MASS STORAGE DEVICES AND
SYSTEMS AND TO SELECT SEVERAL DEVICES FOR DETAILED
ANALYSIS. REPRESENTATIVE DEVICES WERE ANALYZED IN
ORDER TO DETERMINE THEIR SUITABILITY FOR VARIOUS FILE
MANAGEMENT FUNCTIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 747 508 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

DIGITAL COMPUTERS AND SYSTEMS. ARTICLE 8.
PRINCIPLES OF MECHANISM AND STRUCTURAL
ORGANIZATION OF THE COMPUTER STORAGE;

(U)

JUN 72 28P SINELNIKOV, E. M. ;
GOLUBINTSEV, V. O. ; KUPAEV, V. M. ;
REPT. NO. FTD-MT-24-1959-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF IZVESTIYA
VYSSHIKH UCHEBNYKH ZAVEDENII. ELEKTROMEKHANIKA
(USSR) N11 P1263-1271 1970, BY W. W. KENNEDY.

DESCRIPTORS: (*DATA STORAGE SYSTEMS, DESIGN), (*MEMORY
DEVICES, DIGITAL COMPUTERS), (*COMPUTER PROGRAMMING,
MULTIPLE OPERATION), CORE STORAGE, MAGNETIC CORES,
MAGNETIC TAPE, THIN FILM STORAGE DEVICES, SHIFT
REGISTERS, USSR

(U)

IDENTIFIERS: MAGNETIC DRUMS, MAGNETIC DISKS,
MULTIPROGRAMMING, BUFFER STORAGE, SEMICONDUCTOR
COMPUTER STORAGE, TRANSLATIONS

(U)

THE ARTICLE DISCUSSES THE BASIC IDEAS AND
PRINCIPLES OF MULTILEVEL ORGANIZATION OF MEMORY AND
METHODS OF ITS DYNAMIC DISTRIBUTION AMONG SEVERAL
PROGRAMS IN THE MULTIPROGRAM WORK OF A DIGITAL
ELECTRONIC COMPUTER. THESE IDEAS FOUND THEIR FIRST
APPLICATION IN SECOND GENERATION COMPUTERS AND
ATTAINED A DETERMINING INFLUENCE UPON THE EQUIPMENT
PART AND THE OPERATIONAL PART OF A DIGITAL ELECTRONIC
COMPUTER IN THIRD GENERATION COMPUTERS. A SHORT
DESCRIPTION IS GIVEN OF STORES OF VARIOUS LEVELS:
EXTERNAL STORES, HIGH SPEED STORES, BUFFER STORES,
SUPERHIGH SPEED STORES. CONSIDERATION IS GIVEN TO
QUESTIONS OF MEMORY PROTECTION. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 748 226 9/2

APPLIED DATA RESEARCH INC WAKEFIELD MASS

COMPILER DESIGN FOR THE ILLIAC IV. VOLUME
II.

(U)

DESCRIPTIVE NOTE: SEMI-ANNUAL TECHNICAL REPT. NO. 5, 14

JAN-13 JUL 72,

JUL 72 222P

MILLSTEIN, ROBERT E. ;

REPT. NO. CADD-7208-1411-VOL-2

CONTRACT: DAHCO4-70-C-0023, ARPA ORDER-1554

MONITOR: AROD 9187.6-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMPILERS, DESIGN), (*COMPUTER
PROGRAMMING, INSTRUCTION MANUALS), DIGITAL COMPUTERS,
CONTROL SEQUENCES, SUBROUTINES (U)

IDENTIFIERS: PROGRAMMING MANUALS, FORTRAN, ILLIAC,
*ILLIAC 4 COMPUTER, COMPUTER STORAGE MANAGEMENT (U)

THE DOCUMENT DESCRIBES THE FORTRAN TRANSCRIBES
USED IN CONJUNCTION WITH THE PARALYZER ON THE
ILLIAC 4 COMPUTER. AFTER THE PARALYZER HAS
MADE ITS TRANSFORMATIONS ON THE ORIGINAL FORTRAN
PROGRAM, THE TRANSCRIBER CAN OUTPUT THE NEWLY
CREATED PROGRAM IN STANDARD FORTRAN SOURCE FORMAT.
THE OUTPUT FILE CAN THEN BE EDITED AND FED BACK TO
THE FORTRAN COMPILER. STORAGE ALLOCATOR ROUTINES
ARE DESCRIBED ALONG WITH FLOW ANALYSIS ROUTINES AND
THE MACRO EXPANDER AND OPTIMIZER PHASES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 748 242 9/5
GENERAL ELECTRIC CO PITTSFIELD MASS ORDNANCE SYSTEMS

ELECTRICAL CHARACTERIZATION OF COMPLEX
MICROCIRCUITS.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. MAR 71-MAR 72,
JUN 72 306P CITRIN, DAVID A. ;
CONTRACT: F30602-71-C-0188
MONITOR: RADC TR-72-145

UNCLASSIFIED REPORT

DESCRIPTORS: (*INTEGRATED CIRCUITS,
RELIABILITY(ELECTRONICS)), TEST METHODS, LOGIC CIRCUITS,
STANDARDS, AMPLIFIERS, COMPARATORS, MEMORY DEVICES (U)
IDENTIFIERS: LARGE SCALE INTEGRATED CIRCUITS, MEDIUM
SCALE INTEGRATED CIRCUITS, OPERATIONAL AMPLIFIERS,
RADIATION HARDENING, SEMICONDUCTOR COMPUTER STORAGE (U)

SECTION 3000 OF MIL-STD-883 WAS REVIEWED AND
REWRITTEN. NEW OR MODIFIED SLASH SHEETS TO MIL-
M-38510 WERE PREPARED FOR DTL AND T2L-SSI
LOGIC CIRCUITS. 741 OPERATIONAL AMPLIFIER, 710/
711/LM106 DIFFERENTIAL COMPARATOR, AND THE 723
REGULATOR. THE RESULTS OF THE VENDOR COMPARISON,
TEST CIRCUITS, AND PROPOSED SLASH SHEETS ARE
INCLUDED. TEST PROFILES WERE PREPARED FOR A BROAD
RANGE OF BIPOLAR AND MOS SEMICONDUCTOR MEMORIES.
ROM'S PROM'S, AND STATIC AND DYNAMIC RAM'S WERE
CONSIDERED. THE TEST PROFILES COVER STATIC AND
DYNAMIC FUNCTIONAL TEST REQUIREMENTS. MSI/LSI
TEST CONSIDERATIONS WERE BASED UPON THE DEVELOPMENT
OF A MINIMUM SET OF LOGIC TESTS, BASED UPON A STUCK-
AT-ONE, STUCK-AT-ZERO PHILOSOPHY IN ORDER TO PROVIDE
A RAPID AND ACCURATE FUNCTIONAL TEST OF COMPLEX
DEVICES. THIS TESTING CRITERIA TERMED 'LOGIC
INTEGRITY TESTS' IS DESCRIBED AND IS PROPOSED FOR
INCLUSION IN MIL-STD-883. TEST VECTORS BASED
UPON THE LOGIC INTEGRITY TEST FOR THE 2 AND 4
BIT FULL ADDERS, 4 X 2 MULTIPLIER AND THE 9341/54181
ARITHMETIC LOGIC UNIT ARE INCLUDED IN THIS
REPORT. (AUTHOR)

(U)

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/ZOM07

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 748 592 9/2
NAVAL RESEARCH LAB WASHINGTON D C

SIGNAL PROCESSING ELEMENT USERS' REFERENCE
MANUAL.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.

SEP 72 39P
REPT. NO. NRL-7488
PROJ: NRL-B02-06, NRL-B02-10

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING, INSTRUCTION MANUALS),
RADAR SIGNALS, SONAR SIGNALS, COMMUNICATION SYSTEMS,
DIGITAL COMPUTERS, DATA STORAGE SYSTEMS, INPUT OUTPUT
DEVICES

(U)

IDENTIFIERS: ARITHMETIC AND LOGIC UNITS, CENTRAL
PROCESSING UNITS, *SIGNAL PROCESSING

(U)

THE NRL SIGNAL PROCESSING ELEMENT (SPE)
IS A HIGH-PERFORMANCE SIGNAL PROCESSING FACILITY FOR
RADAR, SONAR, AND COMMUNICATION SYSTEMS. IT IS
INTENDED TO BE COMPATIBLE WITH THE NAVY ALL
APPLICATIONS DIGITAL COMPUTER (AADC). THE
SPE CONSISTS OF FOUR MAJOR SUBSYSTEMS: A
MICROPROGRAMMED CONTROL UNIT (MCU), A
BUFFER STORE AND STORAGE CONTROL UNIT
(SCU), A SIGNAL PROCESSING ARITHMETIC UNIT
(SPAU), AND INPUT (I/O) UNITS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 748 996 9/2
NAVAL RESEARCH LAB WASHINGTON D C

SIGNAL PROCESSING ELEMENT FUNCTIONAL
DESCRIPTION. PART 1. MICROPROGRAMMED CONTROL
UNIT, BUFFER STORE, AND STORAGE CONTROL
UNIT.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
SEP 72 40P IHNAT, JOHN P. ; SMITH,
WILLIAM R. ; ROBERTS, JOHN D. , JR. ; WU, Y.
S. ; WALD, BRUCE ;
REPT. NO. NRL-7490
PROJ: NRL-802-06, NRL-802-10

UNCLASSIFIED REPORT

DESCRIPTORS: (*DIGITAL COMPUTERS, MEMORY DEVICES), INPUT
OUTPUT DEVICES, DATA PROCESSING, INTERFACES,
COMMUNICATION SYSTEMS, RADAR EQUIPMENT, SONAR EQUIPME(U)
IDENTIFIERS: MICROPROGRAMMING, ARITHMETIC AND LOGIC
UNITS, SIGNAL PROCESSING, COMPUTERS (U)

THE NRL SIGNAL PROCESSING ELEMENT (SPE) IS
BEING DEVELOPED TO PROVIDE A HIGH-PERFORMANCE SIGNAL
PROCESSING FACILITY FOR RADAR, SONAR, AND
COMMUNICATION SYSTEMS. IT IS INTENDED TO BE
COMPATIBLE WITH THE NAVY'S ALL APPLICATIONS
DIGITAL COMPUTER (AADC). THE SPE CONSISTS
OF FOUR MAJOR SUBSYSTEMS: A MICROPROGRAMMED
CONTROL UNIT (MCU), A BUFFER STORE AND
STORAGE CONTROL UNIT (SCU), A SIGNAL
PROCESSING ARITHMETIC UNIT (SPAU), AND
INPUT/OUTPUT (I/O) UNITS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 749 267 9/2
NORTH AMERICAN ROCKWELL CORP ANAHEIM CALIF ELECTRONICS
GROUP

SINGLE CRYSTAL CYLINDRICAL MAGNETIC DOMAIN
MATERIALS FOR MEMORY APPLICATIONS. (U)

DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL REPT. 1 OCT 71-30
MAY 72:

SEP 72 61P HEINZ, D. M. ; ELKINS, P.
E. ; GEORGE, P. K. ; HUFFMAN, B. J. ;
REPT. NO. C70-1144.26/501
CONTRACT: DAAB07-70-C-0258
PROJ: DA-1-H-062101-A-327
TASK: 1-H-062101-A-32701
MONITOR: ECOM 0258-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*THIN FILM STORAGE DEVICES, GARNET),
(*DATA STORAGE SYSTEMS, FEASIBILITY STUDIES), SINGLE
CRYSTALS, EPITAXIAL GROWTH, YTTRIUM COMPOUNDS, GALLIUM
COMPOUNDS, FERRATES (U)
IDENTIFIERS: YTTRIUM IRON GARNETS, MAGNETIC DOMAINS,
MAGNETIC FILMS, *MAGNETIC BUBBLE DOMAINS, THIN
FILMS (U)

THE GOAL OF THIS PROGRAM IS TO DEMONSTRATE THE
FEASIBILITY OF A BUFFER MEMORY USING THE CONTROLLED
PROPAGATION OF CYLINDRICAL MAGNETIC (OR BUBBLE)
DOMAINS. THE BUBBLE DOMAIN MATERIAL INVESTIGATION,
DIRECTED TOWARD PREPARING SINGLE CRYSTAL LAYERS WHICH
EXHIBIT USEFUL DEVICE PROPERTIES IS BEING PURSUED
WITH HETEROEPITAXIAL FILMS OF GALLIUM-SUBSTITUTED
YTTRIUM IRON GARNET OR RELATED GARNET COMPOSITIONS.
THE BUBBLE DOMAIN DEVICE INVESTIGATION IS DIRECTED
TOWARD DEVELOPING BUBBLE MANIPULATION TECHNIQUES
SUITABLE FOR IMPLEMENTING THE MEMORY. THE BODY OF
THE REPORT CONTAINS SECTIONS ON MATERIAL AND DEVICE
WORK. THE MATERIAL SECTION IS CHIEFLY CONCERNED
WITH CZOCHRALSKI-GROWN RARE EARTH GARNET CRYSTALS
USED AS SUBSTRATES FOR BUBBLE DOMAIN FILMS. THIS
DISCUSSION COVERS OBSERVED IMPERFECTIONS IN CRYSTALS,
THE EFFECT SUBSTRATE IMPERFECTIONS HAVE ON BUBBLE
DOMAIN BEHAVIOR IN EPITAXIAL FILMS AND CRYSTAL GROWTH
PARAMETERS WHICH INFLUENCE THE FORMATION OF THESE
IMPERFECTIONS. THE DEVICE SECTIONS OF THIS REPORT
PRESENT ADVANCES IN BUBBLE DOMAIN DEVICE PHYSICS AND
HARDWARE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 749 732 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

EXPANSION OF ADDRESSING MEANS OF THE M-220
COMPUTER,

(U)

JUL 72 20P ZHILCHENKOV, V. D. ; MARKOV,
A. S. ; MATVEEV, V. D. ; SOKOLOV, S. N. ;
REPT. NO. FTD-HT-23-U011-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. FROM INSTITUT FIZIKI
VYSOKIKH ENERGII, SERPUKHOV. REPORT (USSR) P1-17
1969, BY W. W. KENNEDY.

DESCRIPTORS: (*COMPUTER PROGRAMMING, *DATA STORAGE
SYSTEMS), MEMORY DEVICES, DIGITAL COMPUTERS, USSR (U)
IDENTIFIERS: REGISTERS(COMPUTERS), TRANSLATIONS (U)

A 15-BIT BASE REGISTER AND A 9-BIT COMPLEMENTARY
REGISTER ARE ADDED AS ADDITIONAL MEANS OF ADDRESSING
TO THE M-220 COMPUTER. THE ADDRESS REGISTER IS
ENLARGED. THESE MEANS PROVIDE A STRAIGHTFORWARD
ADDRESSING WITHIN A 32 K CORE MEMORY I.E. ALLOW TO
MAKE A CONTINUOUS INDEXING OF 32 K ARRAYS AND TO
TRANSMIT BY A SINGLE PSEUDO-INSTRUCTION INFORMATION
FILES OF UP TO 32 K WORDS BETWEEN INTERNAL AND
EXTERNAL MEMORY UNITS. THE PAPER DESCRIBES BOTH
MATHEMATICAL AND ELECTRONICAL MODIFICATIONS OF THE
COMPUTER. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 749 759 9/2 14/3
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE AUTOMATIC FORMATION OF A CONSTANT CHECK
SUM WITH ACCESS TO THE MINSK-22 COMPUTER
MAGNETIC-TAPE STORAGE, (U)

AUG 72 9P GONCHAROV, V. A. ; PETROV, V.
I. ;
REPT. NO. FTD-MT-24-49-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF
MEKHAIZATSIYA I AVTOMATIZATSIYA UPRAVLENIYA (USSR)
N4 P38-39 1970, BY HENRY PECK.

DESCRIPTORS: (*DATA STORAGE SYSTEMS, MAGNETIC TAPE),
(*MAGNETIC TAPE, MONITORS), CORE STORAGE, MAGNETIC
CORES, QUALITY CONTROL, USSR (U)
IDENTIFIERS: MINSK 22 COMPUTERS, TRANSLATIONS (U)

ONE OF THE METHODS OF MONITORING THE AUTHENTICITY
OF DATA IN A MAGNETIC-TAPE FILE IS CYCLICALLY SUMMING
UP WORDS WITH A COMPLEMENT NOTATION UP TO THE CHECK
SUM -77...77 BY THE LAST WORD IN THE FILE. ON THE
MINSK-22 COMPUTER THESE OPERATIONS ARE EXECUTED
EITHER BEFORE THE FILE IS NOTED ONTO THE TAPE BY
CYCLIC SUMMATION AND BY THE COMPLEMENT FORMATION INTO
FCMS OR AFTER THE NOTATION OF THE FILE BY THE
COMPLEMENT FORMATION FROM THE CHECK SUM STORED IN THE
SUMMATOR WITH REPEATED ACCESS TO THE ACCUMULATOR FOR
THE COMPLEMENT NOTATION. BOTH IN THIS CASE AND IN
THE OTHER CASE SUBSTANTIAL MACHINE TIME IS LOST.
THE REPORT DESCRIBES A CIRCUIT WHICH PERMITS
AVOIDING THESE TIME LOSSES AND ASSURES THE AUTOMATIC
FORMATION AND NOTATION OF THE COMPLEMENT UP TO THE
CHECK SUM -77...77 BY THE LAST WORD OF THE FILE
DURING THE NOTATION OF DATA ONTO MAGNETIC TAPE. (U)

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AD- 750 435 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PERMANENT STORAGE OF THE 'DNEPR-2' COMPUTER
SYSTEM,

(U)

AUG 72 IIP SELIGEI, A. M. ;
TROSTYANETSKII, D. S. ;
REPT. NO. FTD-MT-24-177-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF
MEKHANIZATSIYA I AVTOMATIZATSIYA UPREVLENIYA (USSR)
N3 P31-32 1970, BY HENRY PECK.

DESCRIPTORS: (*MEMORY DEVICES, DESIGN), DATA STORAGE
SYSTEMS, DIGITAL COMPUTERS, USSR (U)
IDENTIFIERS: READ ONLY STORAGE, TRANSLATIONS (U)

AN INDEPENDENT PERMANENT STORAGE OF THE TRANSFORMER
TYPE OF THE DNEPR-2 COMPUTER SYSTEM IS DESCRIBED
WHICH COLLECTS OCTAL DATA AND OUTPUTS IT IN BINARY.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 750 512 9/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE ORGANIZATION OF THE PARALLEL OPERATION OF
PERIPHERAL EQUIPMENT USING AN ASSOCIATIVE
STORAGE,

(U)

AUG 72 14P LEVINSKII, L. S. ;
REPT. NO. FTD-HT-23-1135-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF NAUCHNO-
TEKHNICHESKAYA INFORMATSIYA. SERIYA I:
ORGANIZATSIYA I METODIKA INFORMATSIONNOI RABOTY
(USSR) N7 P30-32 1971, BY HENRY PECK.

DESCRIPTORS: (*MEMORY DEVICES, INPUT OUTPUT DEVICES),
LOGIC CIRCUITS, PERFORMANCE(ENGINEERING), USSR (U)
IDENTIFIERS: ASSOCIATIVE STORAGE, TRANSLATIONS (U)

A PAGE ORGANIZED BUFFER MEMORY IS USED FOR A
SIMULTANEOUS FUNCTIONING OF MANY INPUT OUTPUT UNITS
CONNECTED TO A CENTRAL COMPUTER SYSTEM. THE MAIN
FEATURES ARE GIVEN ON THE STORAGE DEVICE WITH A BUILT
IN LOGIC FUNCTIONING AS THE DISPATCHING UNIT IN
OPERATIONS WITH PAGES, AS DEVELOPED AT VINITI.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 750 605 9/2
ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT CENTER
FORT BELVOIR VA

SOURCE TEXT EDITOR FOR THE VARIAN DATA
620.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT. JUL 71-JAN 72,
AUG 72 75P GOSS, MELVIN L. ;
REPT. NO. USAMERDC-2033
PROJ: DA-1-T-662705-A-012
TASK: 1-T-662705-A-01204

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS, INSTRUCTION MANUALS),
MAGNETIC TAPE, CORRECTIONS (U)
IDENTIFIERS: PUNCHED TAPE, ASSEMBLY LANGUAGES,
FORTRAN, FORTRAN 4 PROGRAMMING LANGUAGE, *EDITING
ROUTINES (U)

A SOURCE TEXT EDITOR PROGRAM FOR APPLICATION ON THE
VARIAN DATA 620 IN THE COMPUTER-AIDED DESIGN AND
ENGINEERING FACILITY WAS DEVELOPED TO PROVIDE THE
USER WITH A CONVENIENT METHOD FOR GENERATION OF A
SOURCE PAPER TAPE FOR INPUT TO AN ASSEMBLER OR
FORTRAN IV COMPILER; CORRECTION AND MODIFICATION
OF SOURCES TEXT TAPES THROUGH KEYBOARD CONTROL FROM
THE TELETYPEWRITER OR EQUIVALENT CRT TERMINAL
DEVICE AND THE HIGH-SPEED PAPER TAPE SYSTEM;
LISTING SOURCES TEXT TELETYPEWRITER PRINTER;
READING AND WRITING SOURCE TEXT DATA TO LINETAPE
MAGNETIC TAPE FILES; MANIPULATION OF DATA IN SMALL
DATA BASE FILES WITH SUCH POSSIBLE APPLICATIONS AS
SYSTEM FILES DIRECTORIES, MAINTENANCE ASSISTANCE AND
GENERAL TEACHING AID FOR THE COMPUTER-AIDED DESIGN
AND ENGINEERING FACILITY; AND PREPARATION OF SOURCE
DATA FILE FOR INPUT TO DAS ASSEMBLER. THE SOURCE
TEXT EDITOR USES THE LINETAPE MAGNETIC TAPE SYSTEM
MANUFACTURED BY COMPUTER OPERATIONS, INC., AS
DATA FILES. SPECIAL LOADER AND UTILITY
SUBROUTINES, IN ADDITION TO THE SOURCE TEXT EDITOR,
WERE PROVIDED WITH ASSEMBLY LANGUAGE PROGRAM
LISTINGS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 750 665 9/2
NAVAL RESEARCH LAB WASHINGTON D C

SIGNAL PROCESSING ELEMENT FUNCTIONAL
DESCRIPTION. PART 2 (PRELIMINARY). SIGNAL
PROCESSING ARITHMETIC UNIT.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
OCT 72 54P SMITH, WILLIAM R. ; SMITH,
HAROLD H. ;
REPT. NO. NRL-MR-2522
PROJ: NRL-B02-06, XF21-241-015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO PART 1, AD-748 996.

DESCRIPTORS: (*DIGITAL COMPUTERS, LOGIC CIRCUITS), INPUT
OUTPUT DEVICES, DATA PROCESSING, INTERFACES,
COMMUNICATION SYSTEMS, RADAR EQUIPMENT, SONAR EQUIPME(U)
IDENTIFIERS: MICROPROGRAMMING, *ARITHMETIC AND LOGIC
UNITS, SIGNAL PROCESSING, COMPUTERS (U)

THE NRL SIGNAL PROCESSING ELEMENT (SPE) IS
BEING DEVELOPED TO PROVIDE A HIGH-PERFORMANCE SIGNAL
PROCESSING FACILITY FOR RADAR, SONAR, AND
COMMUNICATION SYSTEMS. IT IS INTENDED TO BE
COMPATIBLE WITH THE NAVY'S ALL APPLICATIONS
DIGITAL COMPUTER (AADC). THE SPE CONSISTS
OF FOUR MAJOR SUBSYSTEMS: A MICROPROGRAMMED
CONTROL UNIT (MCU), A BUFFER STORE AND
STORAGE CONTROL UNIT (SPU), A SIGNAL
PROCESSING ARITHMETIC UNIT (SPAU), AND
INPUT/OUTPUT (I/O) UNITS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 751 114 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE FUTURE OF THIN MAGNETIC FILMS, (U)

SEP 72 9P ILYUSHENKO, L. I
REPT. NO. FTD-HT-23-1403-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF PROMYSHLENNOST
BELOROSSI (USSR) N9 P75-76 1970, BY CHARLES T.
OSTERTAG.

DESCRIPTORS: (*THIN FILM STORAGE DEVICES, REVIEWS),
MANUFACTURING, MAGNETIC PROPERTIES, IRON ALLOYS, NICKEL
ALLOYS, COBALT ALLOYS, MICROELECTRONICS, USSR (U)
IDENTIFIERS: *MAGNETIC FILMS, THIN FILMS,
TRANSLATIONS (U)

THE REPORT CONTAINS A DISCUSSION OF MAGNETIC FILM
USED IN MEMORY DEVICES IN ELECTRONIC COMPUTERS.
MAGNETIC FILM IS A STRONG RIVAL OF SEMICONDUCTOR
MEMORY DEVICES; CONSEQUENTLY, THE STUDY OF THE
CHARACTERISTICS OF MAGNETIC FILM AND THE SEARCH FOR
NEW MATERIALS FOR THEIR MANUFACTURE ARE IMPORTANT.
RESEARCH IS BEING CONDUCTED ON FILMS OF DOUBLE AND
TRIPLE ALLOYS BASED ON IRON, NICKEL, AND COBALT
COMBINED WITH CHROMIUM, MANGANESE, COPPER MOLYBDENUM,
SULPHUR, AND PHOSPHORUS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 753 403 9/2
MICHIGAN UNIV ANN ARBOR SYSTEMS ENGINEERING LAB

A CLASS OF OPERATIONS SUITABLE FOR
FRACTIONAL-SIZE ASSOCIATIVE MEMORIES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
OCT 72 60P JOHNSON, DONALD W. ;
REPT. NO. SEL-TR-61, 010749-5-T
CONTRACT: DAAB07-72-C-0058
PROJ: PRON-C8-2-U8501-01-C8-CA
MONITOR: ECOM 0058-61

UNCLASSIFIED REPORT

DESCRIPTORS: (*MEMORY DEVICES,
PERFORMANCE(ENGINEERING)), COST EFFECTIVENESS, TIME
STUDIES, EFFICIENCY, COMPUTER PROGRAMMING
IDENTIFIERS: *ASSOCIATIVE STORAGE

(U)

(U)

ASSOCIATIVE MEMORIES HAVE EXTREMELY USEFUL
CAPABILITIES, BUT THE MEMORIES ARE EXTREMELY
EXPENSIVE. ONE WAY OF CIRCUMVENTING THE HIGH
HARDWARE COST IS TO USE AN ASSOCIATIVE MEMORY WHICH
IS SMALLER THAN THE DATA BASE, AND PROCESS THE DATA
BY PAGES. BY USING A SMALLER MEMORY THE HARDWARE
COSTS ARE THUS REDUCED. SOME OPERATIONS CAN BE
PERFORMED QUITE EFFICIENTLY ON AN ASSOCIATIVE MEMORY
SMALLER THAN THE DATA BASE, (FRACTIONAL-SIZE
ASSOCIATIVE MEMORY) WHILE OTHERS CANNOT. IN
THIS REPORT A CLASS OF OPERATIONS WHICH ARE PERFORMED
EFFICIENTLY ON A FRACTIONAL-SIZE ASSOCIATIVE
MEMORY IS DEFINED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 753 944 17/2 20/5 9/4
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE
VA

PROBLEMS OF LASER BEAM DATA TRANSMISSION,
PROCEEDINGS OF THE FIRST ALL-UNION
CONFERENCE, KIEV, SEPTEMBER 1968,

(U)

NOV 72 491P DERYUGIN, I. A. ;
REPT. NO. FSTC-HT-23-2015-72
PROJ: FSTC-T7023012301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MONO. PROBLEMY PEREDACHI
INFORMATSII LAZERNYM IZLUCHENIEM, KIEV, 1968 P3-
712.

DESCRIPTORS: (*OPTICAL COMMUNICATIONS, SYMPOSIA), (*DATA
TRANSMISSION SYSTEMS, LASERS), (*COHERENT RADIATION,
INFORMATION THEORY), DATA PROCESSING, QUANTUM THEORY,
STEREOPHOTOGRAPHY, OPTICAL SCANNING, MEMORY DEVICES,
SIGNAL-TO-NOISE RATIO, PHOTONS, COUNTING METHODS,
ATMOSPHERE MODELS, USSR

(U)

IDENTIFIERS: OPTICAL STORAGE DEVICES, SIGNAL
PROCESSING, HOLOGRAPHIC INFORMATION STORAGE,
HOLOGRAPHY, INFORMATION SYSTEMS, TRANSLATIONS

(U)

THE DOCUMENT CONTAINS PAPERS PRESENTED AT THE FIRST
CONFERENCE ON THE PROBLEMS OF LASER BEAM DATA
TRANSMISSION. THE VOLUME OF RESEARCH IS DEVOTED TO
THE CONSTRUCTION OF LASER INFORMATION SYSTEMS.
HOWEVER, UP TO THIS TIME THERE HAVE BEEN NO
EFFICIENTLY ACTIVE LASER INFORMATION SYSTEMS. THE
PRIMARY CAUSE HOLDING BACK THE DEVELOPMENT OF
EFFICIENT LASER INFORMATION SYSTEMS IS THE LOW LEVEL
OF RESEARCH IN THE FIELD OF PRECISION PHYSICAL-
CHEMICAL TECHNOLOGY OF SUBSTANCES WITH SMALL LIGHT
LOSSES AND PARAMETERS WHICH ARE EFFICIENTLY
CONTROLLABLE BY MEANS OF ELECTRIC, MAGNETIC AND
ACOUSTIC FIELDS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 754 365 9/2
CALIFORNIA UNIV LOS ANGELES

THE PAGE FAULT FREQUENCY REPLACEMENT
ALGORITHM,

(U)

72 13P CHU, WESLEY W. ; OPDERBECK,
HOLGER ;
CONTRACT: N00014-69-A-0200-4027
PROJ: NR-048-129

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN AFIPS - CONFERENCE
PROCEEDINGS, V41 P597-609 1972.

DESCRIPTORS: (*COMPUTER PROGRAMMING, DATA STORAGE
SYSTEMS), MULTIPLE OPERATION, REAL TIME, TIME SHARING,
ALGORITHMS (U)
IDENTIFIERS: COMPUTER STORAGE MANAGEMENT (U)

DYNAMIC MEMORY MANAGEMENT IS AN IMPORTANT ADVANCE
IN MEMORY ALLOCATION ESPECIALLY IN VIRTUAL MEMORY AND
MULTIPROGRAMMING SYSTEMS. IN THE PAPER THE AUTHORS
CONSIDER THE CASE OF PAGED MEMORY SYSTEMS: THAT
IS, THE PHYSICAL AND LOGICAL ADDRESS SPACE OF THESE
SYSTEMS IS PARTITIONED INTO EQUAL SIZE BLOCKS OF
CONTIGUOUS ADDRESSES. A NEW TYPE OF REPLACEMENT
ALGORITHM BASED ON PAGE FAULT FREQUENCY (PFF) IS
DEVELOPED. THIS PFF REPLACEMENT ALGORITHM
ALLOCATES MEMORY ACCORDING TO THE DYNAMICALLY
CHANGING MEMORY REQUIREMENTS OF EACH PROCESS. IT
DOES NOT REQUIRE PRIOR KNOWLEDGE OF PROGRAM BEHAVIOR
AND CAN BE APPLIED TO PROGRAMS OF DIFFERENT TYPES AND
SIZES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 754 680 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

REALIZATION OF COMBINATION ADDERS FOR A
SIMULTANEOUS ADDITION OF SEVERAL TERMS, (U)

JAN 73 19P BELYAVSKII, V. L. ; KAKURIN,
N. YA. ; VASILENKO, YU. A. ;
REPT. NO. FTD-HT-23-1709-72
PROJ: FTD-T71-05-09, FTD-T71-05-13

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF PRIBORY I SISTEMY
AVTOMATIKI (USSR) N12 P120-127 1969, BY VICTOR
MESENZEFF.

DESCRIPTORS: (*LOGIC CIRCUITS, COMPUTER LOGIC), DIGITAL
COMPUTERS, TRANSFER FUNCTIONS, USSR (U)
IDENTIFIERS: ARITHMETIC AND LOGIC UNITS,
TRANSLATIONS (U)

THE REPORT DISCUSSES COMBINATION SUM CIRCUITS THAT
OPERATE IN A COMPUTER SYSTEM DIFFERENT FROM A BINARY
SYSTEM. THE ENUMERATED TYPES OF SUM CIRCUITS HAVE
CERTAIN DISADVANTAGES OVER ORDINARY N BIT PARALLEL
SUM CIRCUITS IN THE TIME OF EXECUTING TRACKING
OPERATIONS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 754 933 9/2 1/3 14/3
MITRE CORP BEDFORD MASS

COMPARISON OF REQUEST HANDLING CAPABILITY OF
SOME AIRBORNE DRUM MEMORIES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 72 42P SUTHERLAND, NORMAN B. ;
REPT. NO. MTR-2434
CONTRACT: F19628-71-C-0002
PROJ: AF-6700
MONITOR: ESD TR-72-327

UNCLASSIFIED REPORT

DESCRIPTORS: (*MEMORY DEVICES,
PERFORMANCE(ENGINEERING)), AIRBORNE, DATA PROCESSING (U)
IDENTIFIERS: MAGNETIC DRUMS, AVIONICS (U)

A METHOD IS DESCRIBED FOR DEVELOPING A CONSISTENT
FRAMEWORK FOR COMPARING THE REQUEST HANDLING
CAPABILITIES OF VARIOUS DRUM MEMORIES. THE METHOD
PERMITS ONE TO ESTIMATE THE REQUEST CAPACITY OF A
DRUM, GIVEN ITS PHYSICAL CHARACTERISTICS TOGETHER
WITH A NUMBER OF ASSUMPTIONS REGARDING SUCH FACTORS
AS DATA ORGANIZATION, BLOCKING AVERAGE QUANTITY OF
DATA TRANSFERRED PER REQUEST, AND EFFECTIVE LATENCY
TIME. THE METHOD DEVELOPED IS USED TO COMPARE THE
CAPABILITY OF SEVERAL EXISTING OR PROPOSED AIRBORNE
DRUMS. THE EFFECT OF A NUMBER OF POSSIBLE
MODIFICATIONS TO A PARTICULAR DRUM (E.G., INCREASE
DENSITY, INCREASED ROTATIONAL SPEED, REDUCTION OF
NUMBER OF OVERHEAD BITS) IS ALSO EXAMINED.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 755 395 9/2
BOSTON COLL CHESTNUT HILL MASS SPACE DATA ANALYSIS
LAB

GRAPPAC: A PACKAGE OF FORTRAN SUBROUTINES
FOR USE WITH THE 6000 SERIES 274 INTERACTIVE
GRAPHICS SYSTEM OF THE CONTROL DATA
CORPORATION,

(U)

SEP 72 63P VICKSELL, FRONA B. ;
REPT. NO. SCIENTIFIC-2
CONTRACT: F19628-70-C-0120
MONITOR: AFCRL 72-0698

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMMING, GRAPHICS), COMPUTER
PROGRAMS, CONTROL SEQUENCES, DISPLAY SYSTEMS, MEMORY
DEVICES, ERRORS (U)

IDENTIFIERS: FORTRAN, *COMPUTERS, *GRAPHICS,
*INTERACTIONS, COMPUTERS, GRAPHICS (U)

GRAPPAC, A PACKAGE OF FORTRAN SUBROUTINES
FACILITATING USE OF THE 6000 SERIES 274 INTERACTIVE
GRAPHICS SYSTEM OF THE CONTROL DATA
CORPORATION, IS DESCRIBED AND PROGRAMMING EXAMPLES
ARE GIVEN. GRAPPAC MANAGES AN OUTPUT BUFFER FOR
INTERACTIVE GRAPHICS SYSTEM DISPLAY CREATION.
IT ALSO KEEPS A RECORD OF THE DISPLAYS CREATED, IN
LOGICAL GROUPINGS OF ARBITRARY SIZE DETERMINED BY THE
PROGRAMMER; THE PROGRAMMER CAN LATER CALL FOR ERASURE
OF ANY GROUP. CALLING SEQUENCES ARE SHORT AND
SIMPLE. COORDINATE TRANSFORMATIONS ARE AUTOMATIC.
THERE ARE LINEAR AND LOGARITHMIC AXIS ROUTINES AND
GRID LINE GENERATORS. ALPHANUMERIC INPUT FROM THE
CONSOLE IS FACILITATED, WITH FORMAT ERRORS MADE NON-
FATAL. ERROR TRACEBACKS ARE PROVIDED. IN
ADDITION, LOW LEVEL CALCOMP PLOTTING ROUTINES HAVE
BEEN SIMULATED SO THAT HIGHER LEVEL CALCOMP
ROUTINES CAN BE USED WITHIN THE INTERACTIVE
GRAPHICS SYSTEM FRAMEWORK. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 755 491 9/2
MICHIGAN UNIV ANN ARBOR PERFORMANCE MODELING GROUP

RANDOM PARTIALLY PRE-LOADED PAGE
REPLACEMENT ALGORITHMS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUN 72 36P GELENBE, SAMI E. ;
REPT. NO. PMG-72-5
CONTRACT: N00014-67-A-0181-0036
PROJ: NR-049-311

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMMING, REPLACEMENT
THEORY), MULTIPLEXING, MEMORY DEVICES, STOCHASTIC
PROCESSES, CONTROL SEQUENCES, ALGORITHMS, MATHEMATICAL
MODELS, THEOREMS (U)
IDENTIFIERS: *COMPUTER STORAGE MANAGEMENT (U)

THE REPLACEMENT PROBLEM ARISES IN COMPUTER SYSTEM
MANAGEMENT WHENEVER THE EXECUTABLE MEMORY SPACE
AVAILABLE IS INSUFFICIENT TO CONTAIN ALL DATA AND
CODE WHICH MAY BE ACCESSED DURING THE EXECUTION OF AN
ENSEMBLE OF PROGRAMS. AN EXAMPLE OF THIS IS THE
PAGE REPLACEMENT PROBLEM IN VIRTUAL MEMORY COMPUTERS.
THE PROBLEM IS SOLVED BY USING A REPLACEMENT
ALGORITHM WHICH SELECTS CODE OR DATA ITEMS WHICH ARE
TO BE REMOVED FROM EXECUTABLE MEMORY WHENEVER NEW
ITEMS MUST BE BROUGHT IN AND NO MORE FREE STORAGE
SPACE REMAINS. AN AUTOMATON THEORETIC MODEL OF
REPLACEMENT ALGORITHMS IS INTRODUCED FOR THE CLASS OF
'RANDOM, PARTIALLY PRE-LOADED' REPLACEMENT
ALGORITHMS, WHICH CONTAINS CERTAIN ALGORITHMS OF
PRACTICAL AND THEORETICAL INTEREST. AN ANALYSIS OF
THIS CLASS IS PROVIDED IN ORDER TO EVALUATE THEIR
PERFORMANCE, USING THE ASSUMPTION THAT THE REFERENCES
TO THE ITEMS TO BE STORED ARE IDENTICALLY DISTRIBUTED
INDEPENDENT RANDOM VARIABLES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 755 492

9/2

MICHIGAN UNIV ANN ARBOR PERFORMANCE MODELING GROUP

CORE COMPLEMENT POLICIES FOR MEMORY
ALLOCATION AND ANALYSIS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

AUG 72

33P

KIMBLETON, STEPHEN R. ;

REPT. NO. PMG-72-6

CONTRACT: N00014-67-A-0181-0036

PROJ: NR-049-311

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING,
PERFORMANCE(ENGINEERING)), (*DATA STORAGE SYSTEMS,
OPTIMIZATION), (*COMPUTERS, MATHEMATICAL MODELS),
SYSTEMS ENGINEERING, OPERATION, STOCHASTIC PROCESSES,
MATHEMATICAL MODELS (U)

IDENTIFIERS: STATISTICAL PROCESSES, PAGED ENVIRONMENT,
PERFORMANCE EVALUATION, *COMPUTER STORAGE MANAGEMENT,
COMPUTERIZED SIMULATION (U)

A PRIMARY OBJECTIVE IN MODELING COMPUTER SYSTEMS IS
THE PREDICTION OF SYSTEM PERFORMANCE AS A FUNCTION OF
THE VARIOUS POLICIES WHICH MAY BE USED TO ALLOCATE
SYSTEM RESOURCES. THE TWO PRIMARY RESOURCES OF A
COMPUTER SYSTEM ARE THE CPU(S) AND THE MEMORY
HIERARCHY (MH). CPU ALLOCATION POLICIES HAVE
BEEN EXTENSIVELY STUDIED AS HAVE MEMORY MANAGEMENT
POLICIES FOR TWO LEVEL VIRTUAL MEMORY SYSTEMS.
HOWEVER, ALLOCATION POLICIES FOR A MULTILEVEL MH
HAVING THREE OR MORE LEVELS HAVE RECEIVED RELATIVELY
LITTLE ATTENTION. IN THIS PAPER A SINGLE STAGE
POLICY FOR THE ALLOCATION OF INFORMATION DURING THE
LIFETIME OF A PROCESS EXECUTING IN A PAGED
ENVIRONMENT IS DEVELOPED. THIS POLICY IS SHOWN TO
BE OPTIMAL FOR THE CASE OF A SINGLE PROCESS EXECUTING
IN ISOLATION WHOSE REFERENCE STRING CAN BE
CHARACTERIZED IN TERMS OF A SEMI-MARKOV PROCESS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 755 502 13/8
EDGEWOOD ARSENAL MD

APPLICATIONS IN COMPUTER-AIDED DESIGN AND
NUMERICAL CONTROL MANUFACTURING USING
AUTOMATED DRAFTING AND DIGITIZING.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. JUL 71-SEP 72,
JAN 73 84P PEARL, VERNON R. ;
REPT. NO. EA-TR-4720
PROJ: PEMA-4931.57.01217

UNCLASSIFIED REPORT

DESCRIPTORS: (*MECHANICAL DRAWING, AUTOMATION),
(*MANUFACTURING, MECHANICAL DRAWING), MACHINE TOOLS,
DESIGN, DATA PROCESSING, GRAPHICS, PUNCHED TAPE, MACHINE
SHOP PRACTICE (U)

IDENTIFIERS: NUMERICAL CONTROLS, COMPUTER AIDED
DESIGN, *ENGINEERING DRAWINGS (U)

THE REPORT DISCUSSES AN AUTOMATED DRAFTING AND
DIGITIZING SYSTEM FOR ARMY MATERIEL COMMAND
(AMC). THIS SYSTEM WAS TO BE TESTED FOR ITS
CAPABILITY IN PREPARING CONCEPT, EXPERIMENTAL,
PROTOTYPE, AND PRODUCTION DRAWINGS. THE SYSTEM WAS
ALSO STUDIED FOR ITS CAPABILITY OF PRODUCING
NUMERICAL CONTROL (N/C) TAPES THROUGH A
DIGITIZING PROCESS FOR PRODUCTION OF LIMITED QUANTITY
SPARE REPAIR PARTS AND (RDTE) PROTOTYPE ITEMS.
IN EXPLORING THE EQUIPMENT, THE SYSTEM WAS FOUND TO
HAVE AN EXTREMELY HIGH POTENTIAL IN THE MAKING OF
DRAWINGS, PRODUCING AND VERIFYING N/C TAPES,
PERFORMING ENGINEERING CALCULATIONS, AND MANIPULATING
NUMERICAL DATA INTO VARIOUS GRAPHIC FORMS. THE
REPORT CONTAINS VARIOUS EXAMPLES AND ILLUSTRATIONS
THAT HAVE BEEN PRODUCED BY THE AUTOMATIC DRAFTING AND
DIGITIZING SYSTEM. THE ACCOMPLISHMENTS ACHIEVED
THROUGH THE USE OF THIS EQUIPMENT HAVE RESULTED IN A
SIGNIFICANT COST REDUCTION. IT IS, THEREFORE,
CONCLUDED THAT THIS PROJECT HAS BEEN HIGHLY
SUCCESSFUL, AND THE PURCHASE OF SUCH EQUIPMENT IS
HIGHLY RECOMMENDED TO OTHER GOVERNMENT AGENCIES TO
HELP REDUCE LONG ENGINEERING LEAD TIMES AND ACHIEVE
SUBSTANTIAL COST SAVINGS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 756 475 9/2
TEXAS UNIV AUSTIN ELECTRONICS RESEARCH CENTER

SEQUENCING STRATEGIES IN PIPELINE COMPUTER
SYSTEMS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 72 120P REDDI, SREERANGAPALLE
SRINIVASULU ; RAMAMOORTHY, C. V. ;
REPT. NO. TR-134
CONTRACT: F44620-71-C-0091, NSF-GJ-28452
PROJ: AF-4751
MONITOR: AFOSR TR-72-1952

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING, SCHEDULING), MEMORY
DEVICES, DIGITAL COMPUTERS, COMPUTER PROGRAMMING,
GRAPHICS, MATRICES (MATHEMATICS), MATHEMATICAL MODELS (U)
IDENTIFIERS: PARALLEL PROCESSORS, RESOURCE ALLOCATION,
SEQUENCING, GANTT CHARTS, COMPUTERIZED SIMULATION (U)

THE BASIC PRINCIPLES OF OPERATION OF PIPELINING IN
COMPUTER SYSTEMS ARE EXAMINED AND A COMPREHENSIVE
THEORY OF PIPELINE SYSTEMS IS PRESENTED. A
CLASSIFICATION SCHEME FOR THE PIPELINE SYSTEMS IS
PROPOSED AND INVESTIGATED. PRESENT PRACTICE OF
COMPUTERS, EMPLOYING PIPELINING, IS REVIEWED AND
DIRECTIONS FOR FUTURE PRACTICE ARE SUGGESTED.
SIMULATION RESULTS ARE GIVEN FOR A SIMPLE PROPOSED
PIPELINE SYSTEM, INCORPORATING THE DEVELOPED THEORY.
PIPELINE SYSTEMS ARE COMPARED WITH OTHER COMPETING
SYSTEMS TO JUDGE THE FUTURE OF THESE SYSTEMS. A
PIPELINE COMPUTER SYSTEM IS A PROBLEM DEPENDENT
METHOD USING CONCURRENT PROCESSING OF INDEPENDENT
TASKS IN A STREAM OF JOBS BY INDEPENDENT FUNCTIONAL
UNITS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 756 689 9/2 6/4
MASSACHUSETTS INST OF TECH CAMBRIDGE PROJECT MAC

PROJECT MAC PROGRESS REPORT IX, JULY 1971
TO JULY 1972.

(U)

DESCRIPTIVE NOTE: ANNUAL SCIENTIFIC REPT.,
FEB 73 137P FREDKIN, EDWARD I
CONTRACT: N00014-70-A-0362-0001, DAHC15-69-C-0347

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY CONTRACTS
N00014-70-A-0362-0004, N00014-69-A-0276-0002,
F30602-72-C-0001 AND GRANT NSF-GJ-00432. SEE
ALSO AD-735 148.

DESCRIPTORS: (*COMPUTER PROGRAMMING, REPORTS), (*DATA
PROCESSING, REPORTS), (*ARTIFICIAL INTELLIGENCE,
REPORTS), COMPILERS, PROGRAMMING LANGUAGES, SYSTEMS
ENGINEERING, MATHEMATICAL LOGIC, TIME SHARING, AUTOMATA,
EDUCATION, GRAPHICS, MEMORY DEVICES, MULTIPLE OPERATION,
MATHEMATICAL MODELS, MAN MACHINE SYSTEMS, NETWORKS,
QUEUEING THEORY, COMPUTER LOGIC, REAL TIME (U)

IDENTIFIERS: MAC PROJECT, PARALLEL PROCESSORS,
*AUTOMATA, COMPUTATION, PETRI NETS, INFORMATION
SYSTEMS, *COMPUTERS, *GRAPHICS, *INTERACTIONS,
COMPUTERS, GRAPHICS, COMPUTERS, NETWORKS, COMPUTER
STORAGE MANAGEMENT (U)

CONTENTS: AUTOMATIC PROGRAMMING;
COMPUTATION STRUCTURES; COMPUTER SYSTEMS
RESEARCH; DYNAMIC MODELING, COMPUTER GRAPHICS, AND
COMPUTER NETWORKS; EDUCATIONAL COMPUTER SYSTEMS;
MATLAB; PLANNER; SIMPL; THEORY OF
AUTOMATA. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 756 729 9/2
MASSACHUSETTS COMPUTER ASSOCIATES INC WAKEFIELD

COMPILER DESIGN FOR THE ILLIAC IV. (U)

DESCRIPTIVE NOTE: SEMI-ANNUAL TECHNICAL REPT. NO. 6, 14
JUL 72-13 FEB 73,
FEB 73 190P MILLSTEIN, ROBERT E. ;
REPT. NO. CADD-7302-2011
MONITOR: AROD 9187.8-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 13 JUL 72,
AD-748 226.

DESCRIPTORS: (*COMPILERS, DESIGN), (*COMPUTER
PROGRAMMING, INSTRUCTION MANUALS), ALGORITHMS, SHIFT
REGISTERS, MEMORY DEVICES, PERMUTATIONS, CONTROL
SEQUENCES (U)

IDENTIFIERS: PROGRAMMING MANUALS, FORTRAN, ILLIAC,
*ILLIAC 4 COMPUTER (U)

THE REPORT CONTAINS SPECIFICATIONS AND ALGORITHMS
FOR COMPILER DESIGN FOR THE ILLIAC 4 COMPUTER.
THE IMPLEMENTATION OF THE FORTRAN COMPILER
IVTRAN IS DESCRIBED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 756 961 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

'URAL' GENERAL-PURPOSE AUTOMATIC DIGITAL
COMPUTER (PROGRAMMING INSTRUCTIONS, STORAGE
UNITS, BOOK 1: GENERAL INFORMATION), (U)

FEB 73 39P KONOPLYA, N. M. ;
REPT. NO. FTD-MT-24-1680-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO.
UNIVERSALNYE AVTOMATICHESKIE TSIFROVYE
VYCHISLITELNYE MASHINY 'URAL' INSTRUKTSIYA PO
PROGAMMIROVANIYU NAKOPITELI KNIGA 1. OBSHCHIE
SVEDENIYA PSO.170.007.12, N.P., 1969 N1 P1-23, BY
BERNARD L. TAUBER.

DESCRIPTORS: (*COMPUTER PROGRAMMING, INSTRUCTION
MANUALS), DIGITAL COMPUTERS, MEMORY DEVICES, MAGNETIC
TAPE, CODING, USSR (U)
IDENTIFIERS: TRANSLATIONS, *URAL COMPUTERS (U)

THE REPORT REPRESENTS PART OF THE PROGRAMMING
INSTRUCTIONS FOR 'URAL' TYPE COMPUTERS AND CONTAINS
GENERAL INFORMATION ON THE MAGNETIC TAPE, DRUM, DISC
AND FERRITE CORE STORAGE UNITS USED AS MEMORY DEVICES
IN THESE COMPUTERS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 757 181 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATA COMPUTER PROJECT SEMI-ANNUAL TECHNICAL
REPORT, FEBRUARY 1, 1972 TO JULY 31, 1972. (U)

72 59P
CONTRACT: DAHCO4-71-C-0011, ARPA ORDER-1731

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING, NETWORKS), DATA
TRANSMISSION SYSTEMS, INPUT OUTPUT DEVICES, INFORMATION
RETRIEVAL, COMPUTER PROGRAMMING (U)
IDENTIFIERS: ARPA COMPUTER NETWORK, PDP-10 COMPUTERS,
*COMPUTERS, *NETWORKS, COMPUTER STORAGE
MANAGEMENT (U)

THE GOAL OF THE PROJECT IS THE DEVELOPMENT OF A
SHARED, LARGE-SCALE DATA SYSTEM FOR THE ARPA
COMMUNITY. THE SYSTEM MAY BE VIEWED AS A BOX THAT
PERFORMS THE FUNCTIONS OF DATA STORAGE AND DATA
MANAGEMENT ON BEHALF OF MULTIPLE COMPUTERS
SIMULTANEOUSLY CONNECTED TO THE BOX. THE TOPICS
DISCUSSED IN THE REPORT INCLUDE THE FOLLOWING:
HARDWARE INSTALLATION; SOFTWARE DESIGN AND
IMPLEMENTATION; COORDINATION ACTIVITIES; AND
WORKING PAPER NO. 5, 'DATA COMPUTER SOFTWARE
ARCHITECTURE--REVISION 1'. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 757 495 9/2 5/2
TEXAS UNIV AUSTIN ELECTRONICS RESEARCH CENTER

IMPROVEMENT IN A SYSTEM'S THROUGHPUT--FROM THE
STANDPOINT OF FILE ORGANIZATION AND SEARCHING
STRATEGIES. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
SEP 72 162P CHIN, YEH-HAO ; RAMAMOORTHY,
C. V. ;
REPT. NO. TR-137
CONTRACT: F44620-71-C-0091, NSF-GJ-28452
PROJ: AF-4751
MONITOR: AFOSR TR-72-2014

UNCLASSIFIED REPORT

DESCRIPTORS: (•DATA PROCESSING, •INFORMATION RETRIEVAL),
SEARCH THEORY, ALGORITHMS, MATHEMATICAL LOGIC, DECISION
THEORY, CONVEX SETS, MATHEMATICAL MODELS, THEOREMS (U)
IDENTIFIERS: RESOURCE ALLOCATION, •FILE STRUCTURES,
INFORMATION SYSTEMS, •COMPUTER STORAGE MANAGEMENT (U)

EVEN AFTER TWO DECADES OF COMMERCIAL AVAILABILITY
OF THE COMPUTER, THE 'POTENTIALITY' OF THE DIGITAL
SYSTEM HAS BEEN USED MERELY 65 PERCENT OR LESS.
THE REASONS FOR INEFFICIENT USE ARISE PARTLY FROM
INEFFICIENT DESIGN OF SYSTEM SOFTWARE RATHER THAN
LIMITATIONS DUE TO HARDWARE. FILE ORGANIZATION AND
THE STRUCTURE OF MEMORY HIERARCHY ARE PORTIONS OF THE
TOTAL MEMORY MANAGEMENT SYSTEM WHICH IS THE MOST
INFLUENTIAL FACTOR OF A DIGITAL SYSTEM'S THROUGHPUT.
IN THIS REPORT THE CASE OF A LARGE FILE IS
CONSIDERED IN WHICH THE FREQUENCY OF USE OF ITS
COMPONENT SUBFILES ARE KNOWN. THE ORGANIZATION OF
THE FILE IS DEVELOPED SO THAT THE AVERAGE NUMBER OF
ENTRIES TO LOCATE K (>1) ITEMS AT A TIME IN IT BY
MEANS OF BINARY SEARCH OR SEQUENTIAL SEARCH IS
MINIMIZED. THE METHODS ARE USED TO SOLVE THE
REALISTIC PROBLEM OF DESIGNING AN OPTIMAL MEMORY
HIERARCHY TO HOLD THE FILE IN A COMPUTER SYSTEM.
(AUTHOR MODIFIED ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 757 686 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

NETWORK DATA HANDLING SYSTEM. (U)

DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL REPT. 1 AUG 72-31
JAN 73,

JAN 73 37P MARILL, THOMAS ;
CONTRACT: DAHC04-71-C-0011, ARPA ORDER-1731
MONITOR: AROD 9816:2-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON DATACOMPUTER
PROJECT.

DESCRIPTORS: (*DATA PROCESSING, NETWORKS), (*PROGRAMMING
LANGUAGES, DESIGN), (*DATA STORAGE SYSTEMS,
PERFORMANCE(ENGINEERING)), DATA TRANSMISSION SYSTEMS,
INFORMATION RETRIEVAL, WEATHER COMMUNICATIONS, COMPUTER
PROGRAMMING (U)

IDENTIFIERS: INFORMATION SYSTEMS, *COMPUTERS,
*NETWORKS, COMPUTER STORAGE MANAGEMENT (U)

THE REPORT DESCRIBES THE ACTIVITIES FOR THE PERIOD
1 AUG 1972 - 31 JAN 1973. THE ACTIVITY ON THE
PROJECT HAS CENTERED ON DEVELOPMENT OF THE FIRST
SOFTWARE RELEASE, INITIAL SYSTEM DEMONSTRATION,
COORDINATION WITH POTENTIAL USERS, AND WORK ON A
GLOBAL WEATHER DATA BASE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 758 204 9/2
HARVARD UNIV CAMBRIDGE MASS

A SPACE-EFFICIENT LIST STRUCTURE TRACING
ALGORITHM,

(U)

JUN 72 11P WEGBREIT, BEN I
CONTRACT: F19628-71-C-0174, ARPA ORDER-952
MONITOR: ESD TR-72-309

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMMING, ALGORITHMS), DATA
STORAGE SYSTEMS, OPERATION (U)
IDENTIFIERS: *COMPUTER STORAGE MANAGEMENT (U)

THE NOTE PRESENTS AN ALGORITHM FOR TRACING DURING
GARBAGE COLLECTION OF LIST STRUCTURE. IT REQUIRES
ONLY ONE BIT FOR EACH LEVEL OF DOUBLY BRANCHING
STRUCTURE TRACED. COMPARED TO EXISTING TRACE
ALGORITHMS, IT GENERALLY REQUIRES LESS STORAGE --
OFTEN, SUBSTANTIALLY LESS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 758 243 9/2
TEXAS UNIV AUSTIN ELECTRONICS RESEARCH CENTER

SOME DIAGNOSTIC APPROACHES FOR COMPUTER
SYSTEM DESIGN.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 72 101P CHANG, LIH-CHUNG ;
RAMAMOORTHY, C. V. ;
REPT. NO. TR-133
CONTRACT: F44620-71-C-0091, NSF-GJ-28452
PROJ: AF-4751
MONITOR: AFOSR TR-72-1911

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING,
RELIABILITY(ELECTRONICS)), COMPUTER PROGRAMMING,
SWITCHING CIRCUITS, GATES(CIRCUITS), GRAPHICS,
MATHEMATICAL LOGIC, ITERATIONS, THEOREMS (U)
IDENTIFIERS: MICROPROGRAMMING, ARITHMETIC AND LOGIC
UNITS, GRAPHS, SWITCHING THEORY, COMPUTERS, FAULT
DETECTION (U)

THE PURPOSE OF THE REPORT IS TWOFOLD; FIRSTLY, IT
ATTEMPTS TO SURVEY SOME BASIC IDEAS AND PRACTICES IN
THE AREA OF FAULT-TOLERANT COMPUTING, AND SECONDLY,
IT ATTEMPTS TO MOLD THESE INTO A THEORETICAL
FRAMEWORK THAT COULD HELP IN DEVELOPING BOTH DESIGN
STRATEGIES AND TESTING PROCEDURES FOR COMPUTING
SYSTEMS. A DIAGNOSTIC THEORY IS GIVEN WHICH CAN
CHARACTERIZE THE RELATIONSHIPS BETWEEN TESTS AND
FAULTS PROPERLY. BASED ON THIS THEORY, SEVERAL
EFFECTIVE PROCEDURES ARE DEVELOPED FOR THE DETECTION
AND LOCATION OF FAULTS. A STRUCTURAL MODEL OF THE
COMPUTER SYSTEM IS CONSTRUCTED BY THE APPLICATION OF
GRAPH THEORY. IN THIS MODEL, BLOCKING GATE
APPROACH IS USED TO GENERATE TEST PATHS FOR THE
DIAGNOSTICS OF THIS SYSTEM. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 189 9/2 9/1
ROCKWELL INTERNATIONAL CORP ANAHEIM CALIF ELECTRONICS
GROUP

SURVIVABLE P-CHANNEL METAL-OXIDE-
SEMICONDUCTOR (PMOS) COMPUTER DESIGN.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 20 MAR-20 SEP 72,
MAR 73 134P BUTCHER, DARYL T. ; MADDOX,
HOWARD M. ; NIELSEN, ROBERT L. ;
REPT. NO. C72-446/501
CONTRACT: F33615-72-C-1732
PROJ: AF-3176
MONITOR: AFAL TR-73-31

UNCLASSIFIED REPORT

DESCRIPTORS: (*INTEGRATED CIRCUITS, DAMAGE),
(*COMPUTERS, RELIABILITY (ELECTRONICS)), LOGIC CIRCUITS,
VULNERABILITY, MEMORY DEVICES, INPUT OUTPUT DEVICES,
POWER SUPPLIES, GUIDED MISSILE COMPUTERS, (U) GUIDED
MISSILE COMPUTERS (U)
IDENTIFIERS: LARGE SCALE INTEGRATED CIRCUITS, METAL
OXIDE SEMICONDUCTORS, AVIONICS, CENTRAL PROCESSING
UNITS, RADIATION HARDENING, COMPUTERS (U)

THE SIGNIFICANCE OF THIS PROJECT TO THE AIR
FORCE IS THE FACT THAT IT PROVIDES ASSESSMENT, AND
DEVELOPS SPECIFICATIONS FOR EMPLOYMENT, OF ADVANCED
RADIATION-HARDENED FIELD-EFFECT 41.E., METAL-
OXIDE-SEMICONDUCTOR (MOS) AND METAL-
NITRIDE-OXIDE-SEMICONDUCTOR (MNOS)5
TECHNOLOGIES FOR MILITARY/SPACE COMPUTER SYSTEMS.
THE CHARACTERISTICS AND CAPABILITIES OF THE DEVICE
AND PACKAGING TECHNOLOGIES, REQUIRED FOR MOS/MNOS
COMPUTER CONSTRUCTION, ARE DEFINED AND COMPARED TO
THE TECHNIQUES AND HARDWARE REQUIREMENTS FOR LONG-
LIFE COMPUTER SYSTEMS. A COMPUTER ARCHITECTURE IS
DERIVED FROM THE COMPARISON ANALYSIS. (AUTHOR
MODIFIED ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 348 9/2
NAVAL RESEARCH LAB WASHINGTON D C

A LIBRARY MANAGEMENT PROGRAM FOR THE 813
DISK FILE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
MAR 73 46p TOOTHMAN, HAROLD L. ;
REPT. NO. NRL-MR-2570, NRL-COMPUTER BULL-31
PROJ: NRL-DO1-03-A

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS, MEMORY DEVICES),
INFORMATION RETRIEVAL, MAGNETIC TAPE, PUNCHED CARDS,
ALGORITHMS (U)
IDENTIFIERS: MAGNETIC DISKS, CDC 3800 COMPUTERS,
FORTRAN (U)

RANDISK IS A CDC 3800 FORTRAN AND ASSEMBLY
LANGUAGE PROGRAM WHICH ALLOWS THE STORAGE OF DATA,
AND SOURCE AND OBJECT LANGUAGE FILES ON THE 813 DISK
FILE BY A USER ASSIGNED NAME. THESE FILES CAN BE
RECALLED BY NAME AND TRANSFERRED TO A LOGICAL UNIT
FOR FURTHER USE. THE USER HAS SOME CONTROL OF
LOGICAL UNITS UNDER RANDISK AND MAY DOCUMENT HIS
LIBRARY ON TAPE RAPIDLY. DATA COMPRESSION OF CARD
IMAGE FILES CAN BE PERFORMED. THE SOURCE LANGUAGE
LISTING IS INCLUDED. (AUTHOR MODIFIED
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 367 9/2
NAVAL UNDERWATER SYSTEMS CENTER NEWPORT R I

THE ORGANIZATION AND CONTROL OF A SLAVE
MEMORY HIERARCHY.

(U)

DESCRIPTIVE NOTE: RESEARCH REPT.,
FEB 73 122P GORDON, ROBERT L. ;
REPT. NO. NUSC-TR-4429
PROJ: NUSC-A-916-00, ZFXX-112
TASK: ZFXX-112-001

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA STORAGE SYSTEMS, OPTIMIZATION),
MATHEMATICAL MODELS, INFORMATION RETRIEVAL, COMPUTER
PROGRAMMING (U)
IDENTIFIERS: GPSS PROGRAMMING LANGUAGE, IBM 360
COMPUTERS, *COMPUTER STORAGE MANAGEMENT, COMPUTERIZED
SIMULATION (U)

A LOGICAL AND PHYSICAL ORGANIZATION OF A COMPUTER
MEMORY SYSTEM THAT COMPLETELY AUTOMATES THE STORING
AND MOVING OF INFORMATION IS OUTLINED. INFORMATION
USED BY THE COMPUTER PHYSICALLY RESIDES IN AN OPEN-
ENDED HIERARCHY OF MEMORY DEVICES IN WHICH EACH
DEVICE IS RESPONSIBLE FOR THE MANAGEMENT OF ITS OWN
CONTENTS. ALL MEMORIES IN THE HIERARCHY ARE
'SLAVED' TO THE PRIMARY MEMORY, BECAUSE ACTIVITY IN
THE PRIMARY MEMORY TRIGGERS ACTIVITY AT THE OTHER
LEVELS. (AUTHOR MODIFIED ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 545 9/2
TEXAS UNIV AUSTIN ELECTRONICS RESEARCH CENTER

OPTIMAL SQUARE-ROOTING ALGORITHMS FOR
HARDWARE IMPLEMENTATION.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
DEC 72 107P KIM, KWANG HAE ; RAMAMOORTHY,
C. V. ;

REPT. NO. TM-37
CONTRACT: F44620-71-C-0091, NSF-GJ-28452
PROJ: AF-4751
MONITOR: AFOSR TR-73-0682

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMMING, TRANSCENDENTAL
FUNCTIONS), ALGEBRA, ALGORITHMS, ITERATIONS, THESES (U)
IDENTIFIERS: ARITHMETIC AND LOGIC UNITS, COMPUTATION,
IBM 360/91 COMPUTERS, SQUARE ROOTS (U)

THE MAIN OBJECTIVE OF THIS THESIS IS THE
COMPREHENSIVE ANALYSIS AND SYNTHESIS WITH THE
HARDWIRED SQUARE-ROOTING, BELIEVED TO BE THE FIRST
SUBJECT TO BE IMPLEMENTED AMONG VARIOUS FUNCTIONS
WHICH ARE BEING EVALUATED MOSTLY IN SOFTWARE AT
PRESENT. TWO NEW EFFICIENT ALGORITHMS FOR
HARDWIRED SQUARE-ROOTING, HERE CALLED THE ALGORITHM
G AND ALGORITHM T, HAVE BEEN DEVELOPED AND
PRESENTED IN THE MOST DETAIL. THESE USE
MULTIPLICATION AND NO DIVISION. FURTHERMORE,
ALGORITHM G POSSESSES THE PROPERTY OF QUADRATIC
CONVERGENCE, A VERY IMPORTANT ONE FOR THE MACHINE OF
LARGE WORD LENGTH AS FAR AS SPEED IS CONCERNED.
ALGORITHM T IS SUITABLE FOR THE MACHINE OF MEDIUM
WORD LENGTH. (AUTHOR MODIFIED ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 759 710 9/2
NAVAL ELECTRONICS LAB CENTER SAN DIEGO CALIF

A HARD-WIRED FAST FOURIER TRANSFORM
PROCESSOR USING AX+B MODULES. (U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT REPT. FEB-
SEP 72,

FEB 73 38P WASILEWSKI, J. W. ;
REPT. NO. NELC-TR-1860
PROJ: NELC-R207

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING, MODULES(ELECTRONICS)),
ANALOG-TO-DIGITAL CONVERTERS, LOGIC CIRCUITS, POWER
SPECTRA, MEMORY DEVICES (U)

IDENTIFIERS: ARITHMETIC AND LOGIC UNITS, SIGNAL
PROCESSING, FOURIER TRANSFORMATION, FAST FOURIER
TRANSFORM (U)

A SIGNAL PROCESSOR WAS BUILT USING ONE IDENTICAL
BUILDING BLOCK IN THE PROCESSING UNIT. THE DESIGN
UTILIZES MODULARITY AS WELL AS MICROPROGRAMMED
CONTROL. THE UNIT TRANSFORMS 64 INPUT SAMPLES INTO
64 FOURIER COEFFICIENT EACH WITH A WORD LENGTH OF 9
BITS. THE RESULTING COMPLEX COEFFICIENTS ARE
SQUARED AND DISPLAYED ON A SCOPE. THE ARCHITECTURE
OF THE PROCESSOR MAKES POSSIBLE A HIGH-SPEED
UTILIZATION OF HARDWARE. A PROVISION IS MADE TO
SCALE THE PARTIAL RESULTS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 760 171 11/3
BRITISH COLUMBIA UNIV VANCOUVER DEPT OF ELECTRICAL
ENGINEERING

PLASMA ANODIZATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 21 JUN 71-20 JUN 72,
NOV 72 50P PULFREY, DAVID L. ; YOUNG,
LAWRENCE ; OLIVE, GRAHAM ;
CONTRACT: F33615-71-C-1886
MONITOR: AFAL TR-72-362

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED MAR 71, AD-
722 490.

DESCRIPTORS: (*ANODIC COATINGS, PLASMA MEDIUM),
(*DIELECTRIC FILMS, PLASMA MEDIUM), TANTALUM, NIOBIUM,
SILICON DIOXIDE, THIN FILM STORAGE DEVICES, CANADA (U)
IDENTIFIERS: METAL OXIDE SEMICONDUCTORS, *ANODIC
COATINGS, SEMICONDUCTOR COMPUTER STORAGE, THIN FILMS (U)

THE PROCESS OF PLASMA ANODIZATION HAS BEEN
INVESTIGATED USING TWO SYSTEMS. THE FIRST WAS A
COLD CATHODE DC DISCHARGE SYSTEM (REPLACING
APPARATUS DESCRIBED IN OUR EARLIER REPORTS) WITH
AUTOMATED ELLIPSOMETRY TO CONTINUOUSLY FOLLOW THE
GROWTH OF THE OXIDE. THE SECOND SYSTEM EMPLOYED AN
R.F. DISCHARGE WITH GROWTH OF THE OXIDE BEING
FOLLOWED BY MONITORING THE INTENSITY REFLECTIVITY OF
S-LIGHT FROM A HE/NE LASER. EXPERIMENTS ARE
DESCRIBED WHICH INDICATE THAT NEGATIVE OXYGEN IONS
FORM THE PLASMA ARE NOT DIRECTLY INVOLVED IN THE
GROWTH OF OXIDES ON TANTALUM IN A D.C. DISCHARGE.
ALSO REPORTED ARE DATA ON THE THICKNESS-AND
TEMPERATURE-DEPENDENCE OF THE RELATION BETWEEN OXIDE
FIELD AND OXIDE GROWTH RATE FOR THE CASE OF SI
ANODIZATION IN AN R.F. DISCHARGE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 760 274 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THREE-SPEED TAPE PERFORATOR PL-75-100-150,

(U)

APR 73 8P KOVALENKO, N. P. IFEDOROV,
A. D. IZINCHENKO, A. F. I
REPT. NO. FTD-HT-23-0251-73
PROJ: FTD-T71-05-09, FTD-T71-05-13

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MEKHAIZATSIIYA I
AVTOMATIZATSIIYA UPRAVLENIYA (USSR) NI P46-47 1972, BY
FRANCIS T. RUSSELL.

DESCRIPTORS: (*INPUT OUTPUT DEVICES, DESIGN), PUNCHED
TAPE, USSR (U)

IDENTIFIERS: *TAPE PUNCHES, TRANSLATIONS (U)

TAPE PERFORATORS BELONG TO THE LIST OF VERY
IMPORTANT DEVICES FOR THE OUTPUT OF INFORMATION FROM
COMPUTERS AND AUTOMATIC SYSTEMS. THE REPORT
DESCRIBES A THREE-SPEED TAPE PERFORATOR, PL-75-100-
150 WHICH PROVIDES PERFORATION OF TAPE AT THREE
SPEEDS. THE MAIN THING IN THE DEVELOPMENT AND
STUDY OF THIS PERFORATOR WAS THE CREATION OF A BLOCK
DIAGRAM OF CODE SELECTION WHICH PROVIDES TAPE
PERFORATION AT ANY SPEED, I.E., FROM 0 TO 150 LINES/
SECOND. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 760 296 9/2
BROWN UNIV PROVIDENCE R I CENTER FOR COMPUTER AND
INFORMATION SCIENCES

THE BROWN UNIVERSITY GRAPHICS
SYSTEM(BUGS) OVERVIEW.

(U)

DESCRIPTIVE NOTE: TECHNICAL PAPER,
FEB 73 35P STABLER, GEORGE M. ;
CONTRACT: N00014-67-A-0191-0023; NSF-GJ-28401

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING, GRAPHICS), INPUT OUTPUT
DEVICES, DISPLAY SYSTEMS, SHIFT REGISTERS, COMPUTER
PROGRAMMING (U)
IDENTIFIERS: MICROPROGRAMMING, ARITHMETIC AND LOGIC
UNITS, COMPUTERS, GRAPHICS (U)

THE AIM OF THE DOCUMENT IS TO PROVIDE A UNIFIED
OVERVIEW OF THE CURRENT RESEARCH ACTIVITIES OF THE
BROWN UNIVERSITY GRAPHICS PROJECT. THE
STATED OBJECTIVES OF THE PROJECT'S ACTIVITIES ARE AN
INVESTIGATION INTO THE AREA OF MEDIUM-COST,
MICROPROGRAMMABLE, INTELLIGENT GRAPHICS TERMINALS AND
THE 'DIVISION OF LABOR' TRADE-OFFS BETWEEN A
MAINFRAME PROCESSOR AND THE INTELLIGENT SATELLITE.
A HIGH LEVEL SYSTEM IMPLEMENTATION LANGUAGE AND A
FACILITY FOR ONLINE SYMBOLIC DEBUGGING OF GRAPHIC
DATA STRUCTURES ARE TO BE PROVIDED FOR SYSTEM
IMPLEMENTERS AND USERS. ALSO OF INTEREST IS THE
IMPACT WHICH MICROPROGRAMMING HAS ON THE DESIGN OF
OTHER ASPECTS OF A GRAPHICS TERMINAL, FOR EXAMPLE,
SYSTEM CONFIGURATION AND THE LOCAL OPERATING SYSTEM
DESIGN. THE MOTIVATION AND AIMS OF THE PROJECT ARE
DISCUSSED IN DETAIL. (MODIFIED AUTHOR
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 760 305 9/2

BROWN UNIV PROVIDENCE R I DIV OF APPLIED MATHEMATICS

THE SUPER INTEGRAL MICROPROGRAMMED
ARITHMETIC LOGIC EXPEDITER (SIMALE),

(U)

JAN 73 22P WEBBER, HAROLD H. , JR;
CONTRACT: N00014-67-A-0191-0023, NSF-GJ-28401
PROJ: NR-049-334

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN SIGMICRO, V3 N4 22P
1973.

DESCRIPTORS: (*DATA PROCESSING, GRAPHICS), INTERFACES,
DISPLAY SYSTEMS, COMPUTER PROGRAMMING, SHIFT REGISTER(U)
IDENTIFIERS: MICROPROGRAMMING, PARALLEL PROCESSORS,
ARITHMETIC AND LOGIC UNITS, COMPUTERS, GRAPHICS (U)

THE PAPER DISCUSSES THE SIMALE WHICH IS A VERY
HIGH SPEED, DYNAMICALLY MICROPROGRAMMED, PARALLEL
PROCESSING COMPUTER. IT WILL SOON BE INTEGRATED
INTO THE BROWN UNIVERSITY GRAPHICS SYSTEM
WHERE IT WILL BE USED PRIMARILY FOR REAL-TIME PICTURE
TRANSFORMATIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 760 669 12/1 9/2
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER BETHESDA
MD

A COMPARATIVE STUDY OF SEVERAL CORE
STORAGE SCHEMES FOR LARGE SPARSE POSITIVE
DEFINITE MATRICES WITH REFERENCE TO THE
CHOLESKY ALGORITHM,

(U)

NOV 72 38P GIGNAC, DONALD A. ;
REPT. NO. NSRDC-4017
PROJ: SR014-03
TASK: SR014-03-01, 15322

UNCLASSIFIED REPORT

DESCRIPTORS: (*MATRICES(MATHEMATICS), *COMPUTER
PROGRAMMING), COMPILERS, MEMORY DEVICES, ALGORITHMS (U)
IDENTIFIERS: CHOLESKY DECOMPOSITION, *SPARSE MATRIX,
FINITE ELEMENT ANALYSIS, FORTRAN, STRUCTURAL
ANALYSIS (U)

IN THE FINITE ELEMENT APPROACH TO STATIC STRUCTURAL
ANALYSIS, THE SOLUTION OF THE EQUATION $KU = P$ A
POSITIVE DEFINITE SYSTEM OF SIMULTANEOUS LINEAR
EQUATIONS, IS BASIC. CONSIDERABLE DIFFICULTY MAY
BE EXPERIENCED WHEN K IS VERY LARGE AND SPARSE.
THE REPORT DOCUMENTS AN INVESTIGATION OF SEVERAL
FORTRAN SUBROUTINES IN ORDER TO OBTAIN AN EFFICIENT
CHOLESKY ALGORITHM SUBROUTINE WITH ECONOMICAL CORE
STORAGE FOR AN IN-CORE SOLUTION OF $KU = P$ FOR
LARGE SPARSE K . (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 760 954 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

GENERAL PURPOSE AUTOMATIC DIGITAL COMPUTER
URAL-14 TECHNICAL DESCRIPTION. (U)

APR 73 120P
REPT. NO. FTD-MT-24-1677-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO.
UNIVERSALNYE AVTOMATICHESKIE TSIFROVYE
VYCHISLITELNYE MASHINY URAL-14 TEKHNICHESKOE
OPISANIE PSO.170.008TO. SISTEMA KOMAND, N.P.,
1968 N2 P1-67, BY CHARLES T. OSTERTAG, JR.

DESCRIPTORS: (DIGITAL COMPUTERS, INSTRUCTION MANUALS),
DATA STORAGE SYSTEMS, SHIFT REGISTERS, MAGNETIC TAPE,
COMPUTER PROGRAMMING, USSR (U)
IDENTIFIERS: ARITHMETIC AND LOGIC UNITS,
TRANSLATIONS (U)

THE INSTRUCTION SYSTEM FOR THE URAL-14 COMPUTER
CONTAINS UP TO 230 INSTRUCTIONS AND CAN BE CHANGED
DEPENDING ON THE CONFIGURATION OF THE COMPUTER.
THE DESCRIPTION INCLUDES: A DESCRIPTION OF THE
GROUP OF DATA-TRANSFER AND ARITHMETIC OPERATIONS; A
DESCRIPTION OF THE GROUP OF THE OPERATIONS PERFORMED
BY THE CONTROL UNIT ON THE BASIS OF CONTROL
INSTRUCTIONS; A DESCRIPTION OF THE GROUPS OF
OPERATIONS PERFORMED BY THE COMPUTER DURING THE
SERVICING OF INPUT-OUTPUT UNITS AND DATA STORAGE
UNITS; A DESCRIPTION OF SERVICE OPERATIONS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 761 172 9/2
STANFORD UNIV CALIF DIGITAL SYSTEMS LAB

A SIMULATOR FOR COMPUTER SYSTEMS WITH STORAGE
UNITS HAVING ROTATIONAL DELAYS. (U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
AUG 72 23P FULLER, SAMUEL H. ;
REPT. NO. TN-16
CONTRACT: N00014-67-A-0112-0044, AT-(04-3)-515

UNCLASSIFIED REPORT

DESCRIPTORS: (*MEMORY DEVICES, SCHEDULING), (*DATA
STORAGE SYSTEMS, SIMULATION), COMPUTER PROGRAMS,
INSTRUCTION MANUALS, PERFORMANCE(ENGINEERING) (U)
IDENTIFIERS: MAGNETIC DISKS, MAGNETIC DRUMS, SIMULATOR
ROUTINES, FORTRAN, IBM 360 COMPUTERS, COMPUTERIZED
SIMULATION (U)

THE NOTE DESCRIBES A SIMULATOR FOR COMPUTER SYSTEMS
WITH SECONDARY STORAGE UNITS HAVING ROTATIONAL
DELAYS, I.E., DRUMS AND DISKS. THIS SIMULATOR IS
ABLE TO MODEL A WIDE RANGE OF DRUMS AND DISKS AND IS
PRIMARILY INTENDED TO BE USED TO STUDY ALTERNATIVE
SCHEDULING DISCIPLINES FOR ROTATING STORAGE DEVICES.
A DISCUSSION IS INCLUDED ON THE PRECISION OF THE
SUMMARY STATISTICS OF THE SIMULATOR, AND A SHORT
USER'S GUIDE IS PROVIDED TO AID OTHERS IN THE USE OF
THE SIMULATOR. THE REPORT INCLUDES SOME IBM 360
FORTRAN LISTINGS FOR THE MAIN SIMULATOR LOOP.
(MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 761 175 9/2
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS

PERFORMANCE OF AN I/O CHANNEL WITH MULTIPLE
PAGING DRUMS. (DIGEST EDITION). (U)

DESCRIPTIVE NOTE: TECHNICAL REPT. NO. 27,
AUG 72 9P FULLER, SAMUEL H. ;
REPT. NO. SU-SEL-73-010, STAN-CS-73-351
CONTRACT: N00014-67-A-0112-0044, AT-(04-3)515
PROJ: AF-7101

UNCLASSIFIED REPORT

DESCRIPTORS: (*MEMORY DEVICES, OPTIMIZATION),
SCHEDULING, PERFORMANCE(ENGINEERING), STOCHASTIC
PROCESSES, MATHEMATICAL MODELS (U)
IDENTIFIERS: *MAGNETIC DRUMS, MARKOV CHAINS, PAGED
ENVIRONMENT (U)

FOR ROTATING STORAGE UNITS, A PAGING DRUM
ORGANIZATION IS KNOWN TO OFFER SUBSTANTIALLY BETTER
RESPONSE TIME TO I/O REQUESTS THAN IS A MORE
CONVENTIONAL (FILE) ORGANIZATION. WHEN SEVERAL,
ASYNCHRONOUS PAGING DRUMS ARE ATTACHED TO A SINGLE
I/O CHANNEL, HOWEVER, MUCH OF THE GAIN IN
RESPONSE TIME DUE TO THE PAGING ORGANIZATION IS LOST;
THIS ARTICLE INVESTIGATES THE REASONS FOR THIS LOSS
IN PERFORMANCE. A MODEL OF AN I/O CHANNEL WITH
MULTIPLE PAGING DRUMS IS PRESENTED AND A MARKOV
CHAIN THAT CLOSELY APPROXIMATES THE BEHAVIOR OF THE
I/O CHANNEL IS EMBEDDED INTO THE MODEL. THE
ANALYSIS THEN LEADS TO THE MOMENT GENERATING FUNCTION
OF SECTOR QUEUE SIZE AND THE LAPLACE-STIELTJES
TRANSFORM OF THE WAITING TIME. A SIGNIFICANT
OBSERVATION IS THAT THE EXPECTED WAITING TIME FOR AN
I/O REQUEST TO A DRUM CAN BE DIVIDED INTO TWO
TERMS: ONE INDEPENDENT OF THE LOAD OF I/O
REQUEST TO THE DRUM AND ANOTHER THAT MONOTONICALLY
INCREASES WITH INCREASING LOAD. (MODIFIED AUTHOR
ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 761 176 9/2
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS

THE EXPECTED DIFFERENCE BETWEEN THE SHORTEST
LATENCY TIME FIRST (SLTF) AND MINIMAL
TOTAL PROCESSING TIME (MTPT) DRUM
SCHEDULING DISCIPLINES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. NO. 28,
AUG 72 7P FULLER, SAMUEL H. ;
REPT. NO. SU-SEL-73-011, STAN-CS-72-352
CONTRACT: N00014-67-A-0112-0044, AT-(04-3)515
PROJ: AF-7101

UNCLASSIFIED REPORT

DESCRIPTORS: (•MEMORY DEVICES, SCHEDULING), ALGORITHMS,
SIMULATION (U)
IDENTIFIERS: •MAGNETIC DRUMS, RANDOM WALK (U)

THE REPORT IS A SEQUEL TO AN EARLIER REPORT
(FULLER, 1971) THAT DEVELOPS A MINIMAL-TOTAL-
PROCESSING-TIME (MTPT) DRUM SCHEDULING ALGORITHM.
A QUANTITATIVE COMPARISON BETWEEN MTPT SCHEDULES
AND SHORTEST-LATENCY-TIME-FIRST (SLTF) SCHEDULES,
COMMONLY ACKNOWLEDGED AS GOOD SCHEDULES FOR DRUM-LIKE
STORAGE UNITS, IS PRESENTED HERE. THE ANALYSIS
DEVELOPS AN ANALOGY TO RANDOM WALKS AND PROVES
SEVERAL ASYMPTOTIC PROPERTIES OF COLLECTIONS OF
RECORDS ON DRUMS. THESE PROPERTIES ARE SPECIALIZED
TO THE MTPT AND SLTF ALGORITHMS AND IT IS SHOWN
THAT FOR SUFFICIENTLY LARGE SETS OF RECORDS, THE
EXPECTED PROCESSING TIME OF A SLTF SCHEDULE IS
LONGER THAN A MTPT SCHEDULE BY THE EXPECTED RECORD
LENGTH. THE RESULTS OF A SIMULATION STUDY ARE ALSO
PRESENTED TO SHOW THE DIFFERENCE IN MTPT AND SLTF
SCHEDULES FOR SMALL SETS OF RECORDS AND FOR
SITUATIONS NOT COVERED IN THE ANALYTIC DISCUSSION.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 761 185 9/2
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS

RANDOM ARRIVALS AND MINIMAL TOTAL
PROCESSING TIME (MTPT) DISK SCHEDULING
DISCIPLINES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. NO. 29,
AUG 72 10P FULLER, SAMUEL H. I
REPT. NO. SU-SEL-73-012, STAN-CS-73-J53
CONTRACT: N00014-67-A-0112-0044, AT-(04-3)515
PROJ: AF-7101

UNCLASSIFIED REPORT

DESCRIPTORS: (*MEMORY DEVICES, SCHEDULING), ALGORITHM(U)
IDENTIFIERS: *MAGNETIC DRUMS, MAGNETIC DISKS (U)

THE ARTICLE INVESTIGATES THE APPLICATION OF
MINIMAL-TOTAL-PROCESSING TIME (MTPT) SCHEDULING
DISCIPLINES TO ROTATING STORAGE UNITS WHEN RANDOM
ARRIVAL OF REQUESTS IS ALLOWED. FIXED-HEAD DRUM AND
MOVING-HEAD DISK STORAGE UNITS ARE CONSIDERED AND
PARTICULAR EMPHASIS IS PLACED ON THE RELATIVE MERITS
OF THE MTPT SCHEDULING DISCIPLINE WITH RESPECT TO
THE SHORTEST-LATENCY-TIME-FIRST (SLTF) SCHEDULING
DISCIPLINE. THE DATA PRESENTED ARE THE RESULTS OF
SIMULATION STUDIES. SITUATIONS ARE DISCOVERED IN
WHICH THE MTPT DISCIPLINE IS SUPERIOR TO THE SLTF
DISCIPLINE, AND SITUATIONS ARE ALSO DISCOVERED IN
WHICH THE OPPOSITE IS TRUE. AN IMPLEMENTATION OF
THE MTPT SCHEDULING ALGORITHM IS PRESENTED AND THE
COMPUTATIONAL REQUIREMENTS OF THE ALGORITHM ARE
DISCUSSED. IT IS SHOWN THAT THE SORTING PROCEDURE
IS THE MOST TIME CONSUMING PHASE OF THE ALGORITHM.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 761 520 9/2
AUERBACH CORP PHILADELPHIA PA

DM-1 IMPLEMENTATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. AUG 69-DEC 72,
MAR 73 97P MUHLHAUSER, ROBERT R. ;
CONTRACT: F30602-69-C-0193
MONITOR: RADC TR-73-68

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON DATA MANAGER-1 (DM-1).

DESCRIPTORS: (*COMPUTER PROGRAMMING, INSTRUCTION
MANUALS), DATA STORAGE SYSTEMS, INFORMATION RETRIEVAL,
PROGRAMMING LANGUAGES (U)
IDENTIFIERS: JOVIAL, *COMPUTER STORAGE MANAGEMENT,
DATA MANAGEMENT, DATA BASES (U)

UNDER CONTRACT NO. F30602-69-C-0193 WITH
ROME AIR DEVELOPMENT CENTER (RADC),
AUERBACH ASSOCIATES, INC., HAS BEEN DEVELOPING
DATA MANAGER (DM-1), A COMPREHENSIVE DATA
BASE MANAGEMENT SYSTEM. THIS EFFORT, INITIATED IN
EARLY 1969, HAS NOW PRODUCED A BASE-LINE SYSTEM WHICH
IS UNDERGOING TEST AND EVALUATION IN THE RADC
LABORATORY. THIS FINAL REPORT SUMMARIZES THAT
EFFORT, ENTITLED DM-1 IMPLEMENTATION. DM-1 HAS
BEEN IMPLEMENTED ON A HONEYWELL G-635 (FORMERLY
THE GE-635) UNDER THE GCOS-III OPERATING
SYSTEM. THE BASE-LINE SYSTEM WHICH IS NOW
OPERATIONAL OFFERS COMPREHENSIVE DATA AND JOB
HANDLING FACILITIES TO COMMAND-LEVEL USERS, AS WELL
AS APPLICATIONS PROGRAMMERS. SECTION 1 OF THIS
REPORT OUTLINES THE DESIGN REQUIREMENTS AND
IMPLEMENTATION GUIDELINES WHICH GOVERNED THE
IMPLEMENTATION EFFORT. SECTION DESCRIBES DM-1/
G-635 AS IT HAS BEEN IMPLEMENTED. SECTION 3
OFFERS AUERBACH CONCLUSIONS AND RECOMMENDATIONS
WITH RESPECT TO THE EFFORT. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 762 774 9/2
CALIFORNIA UNIV LOS ANGELES CALIF DEPT OF COMPUTER
SCIENCE

MEASUREMENT DATA ON THE WORKING SET
REPLACEMENT ALGORITHM AND THEIR APPLICATIONS,

(U)

72 12P OLIVER, N. ; CHU, W. W. ;
OPDERBECK, H. ;
CONTRACT: N00014-69-A-0200-4927, DAHC15-69-C-0285
PROJ: NR-048-129

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN PROCEEDINGS OF THE
SYMPOSIUM ON COMPUTER-COMMUNICATIONS NETWORKS AND
TELETRAFFIC, POLYTECHNIC INSTITUTE OF BROOKLYN, 4-6
APR 72, P113-124 1972.

DESCRIPTORS: (*DATA PROCESSING, TIME SHARING), (*DATA
STORAGE SYSTEMS, QUEUEING THEORY), ALGORITHMS,
SCHEDULING (U)
IDENTIFIERS: MULTIPROGRAMMING, PAGED ENVIRONMENT,
*COMPUTER STORAGE MANAGEMENT (U)

PAGE INTER-REFERENCE INTERVAL DISTRIBUTION, AVERAGE
PAGE FAULT FREQUENCY (THE FREQUENCY OF THOSE
INSTANCES AT WHICH AN EXECUTING PROGRAM REQUIRES A
PAGE OF DATA OR INSTRUCTIONS NOT IN THE MAIN
MEMORY) AVERAGE WORKING SET SIZE AND INTER-PAGE
FAULT-TIME (TIME BETWEEN PAGE FAULT) DISTRIBUTION
FOR A SIMULATED WORKING SET REPLACEMENT
ALGORITHM FOR THREE TYPICAL PROGRAMS WITH DIFFERENT
SIZES WERE MEASURED ON THE UCLA SIGMA EXECUTIVE
(SEX) TIME-SHARING SYSTEM VIA PAGE REFERENCE
STRINGS. THESE MEASURED RESULTS ARE REPORTED IN
THIS PAPER. THE AVERAGE PAGE FAULT FREQUENCY
RELATIONSHIPS BETWEEN MEASURED RESULTS ARE REPORTED
IN THIS PAPER. THE AVERAGE PAGE FAULT FREQUENCY
RELATIONSHIPS BETWEEN WORKING SET PARAMETERS AND
PROCESS SCHEDULING ARE DISCUSSED. THESE
RELATIONSHIPS ARE USEFUL IN PLANNING THE WORKING SET
SIZE AND PROCESS SCHEDULING WHICH OPTIMIZE SYSTEM
EFFICIENCY. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 763 086 9/2 20/12
CAMBRIDGE MEMORIES INC NEWTONVILLE MASS MAGNETIC THIN FILM
DEVELOPMENT DEPT

RESEARCH IN FERROMAGNETICS: DOMAIN TIP
DEVICES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 JAN-31 DEC 72,
JAN 73 103P SPAIN, ROBERT J. JAUVTIS,
HARVEY I. CORWIN, FRANK I
REPT. NO. 976-F
CONTRACT: F19628-72-C-0134
PROJ: AF-5632
TASK: 563202
MONITOR: AFCRL TR-73-0175

UNCLASSIFIED REPORT

DESCRIPTORS: (*THIN FILM STORAGE DEVICES,
MANUFACTURING), (*SHIFT REGISTERS, DESIGN),
FERROMAGNETIC MATERIALS, METAL FILMS, SUBSTRATES,
ALUMINUM, DEFECTS(MATERIALS), MULTIPLEXING,
OPERATION (U)
IDENTIFIERS: MAGNETIC DOMAINS, MAGNETIC FILMS, BLOCK
ORIENTED RANDOM ACCESS MEMORIES, BORAM(BLOCK ORIENTED
RANDOM ACCESS MEMORY), RANDOM ACCESS COMPUTER STORAGE,
THIN FILMS (U)

THE DESIGN AND OPERATION OF THE DOT BLOCKING TYPE
SHIFT REGISTER IS DESCRIBED AND THE RESULTS OF TIP
BLOCKING EXPERIMENTS PRESENTED. AN ELECTRONIC
TECHNIQUE FOR DETERMINING THE POSITION OF A CHANNEL
DEFECT IS DISCUSSED. DEFECT SIZE IS ALSO
CONSIDERED. ALUMINUM UNDERLAYER STUDIES WERE
PERFORMED WITH AN OPTICAL INSTRUMENT CALLED THE
3ALUMINUM MEASURING INSTRUMENT3 (AMI).
THE EFFECT OF PROCESS CHEMICALS ON ALUMINUM FILMS
WAS ALSO STUDIED. AN OPTICAL MAGNETIC FILM
THICKNESS MEASUREMENT TECHNIQUE IS DESCRIBED. A
GENERAL COMPARISON OF THE DOT AND OTHER STORAGE
TECHNOLOGIES IS PRESENTED. THE DOT AND BUBBLE
ARE EXAMINED IN MORE DETAIL. DOT SHIFT REGISTER
TECHNIQUES ARE DESCRIBED. THESE INCLUDE INPUT AND
OUTPUT MULTIPLEXING AND NDRO SHIFT REGISTERS.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 763 224 9/2
AUTONETICS ANAHEIM CALIF

SINGLE CRYSTAL CYLINDRICAL MAGNETIC DOMAIN
MATERIALS FOR MEMORY APPLICATIONS.

(U)

DESCRIPTIVE NOTE: SEMI-ANNUAL REPT. 1 JUN 72-31 MAR
73,

JUL 73 158P GEORGE, P. K. I
REPT. NO. C70-1144/501
CONTRACT: DAAB07-70-C-0258
PROJ: DA-1-H-062101-A-327
TASK: 1-H-062101-A-32701
MONITOR: ECOM 0258-4-70

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED SEP 72, AD-
749 267.

DESCRIPTORS: (*THIN FILM STORAGE DEVICES, GARNET),
(*DATA STORAGE SYSTEMS, FEASIBILITY STUDIES), (*SHIFT
REGISTERS, DESIGN), MAGNETIC MATERIALS, MAGNETIC
PROPERTIES, MATHEMATICAL MODELS, MANUFACTURING, YTTRIUM
COMPOUNDS, FERRATES, SILICON DIOXIDE, INTEGRAL
EQUATIONS (U)

IDENTIFIERS: YTTRIUM IRON GARNETS, *MAGNETIC BUBBLE
DOMAINS, MAGNETIC DOMAINS, MAGNETIC FILMS, PERMALLOYS,
FREDHOLM EQUATIONS, THIN FILMS (U)

THE FIRST PART OF THE REPORT DESCRIBES A TWO-
DIMENSIONAL MATHEMATICAL MODEL CURRENTLY BEING USED
TO DESCRIBE FIELD ACCESS BUBBLE DOMAIN PROPAGATION.
THE MODEL IS BASED UPON A CONTINUOUS IN-PLANE
MAGNETIZATION DISTRIBUTION IN THE PERMALLOY WHICH IS
DETERMINED BY MINIMIZING THE SYSTEM ENERGY-ASSUMED TO
CONSIST OF ZEEMAN AND MAGNETOSTATIC ENERGY
CONTRIBUTIONS. THE NUMERICAL TECHNIQUES REQUIRED TO
SOLVE THE RESULTING COUPLED FREDHOLM INTEGRAL
EQUATIONS ARE DESCRIBED AS WELL AS THE COMPLETE
COMPUTER PROGRAM USED TO ANALYZE PROPAGATION IN
REALISTIC PERMALLOY PATTERNS. RESULTS ARE PRESENTED
AND DISCUSSED FOR BUBBLE PROPAGATION ALONG A 90
DEGREE CHEVRON, A T-BAR AND A Y-BAR. THE
SECOND PART OF THIS REPORT DESCRIBES THE DESIGN AND
CONSTRUCTION OF A HIGH-FREQUENCY MULTIPLE-BAR-
CHEVRON SHIFT REGISTER. EACH OF THE INDIVIDUAL
COMPONENTS - GENERATOR, TRACK, DETECTOR, ANNIHILATOR
- ARE DESCRIBED ALONG WITH THE EXPERIMENTS USED TO
DESIGN THEM. (MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 763 234 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

PROGRAMMING INSTRUCTIONS. CENTRAL PROCESSING
UNITS. SYSTEM OF INSTRUCTIONS. PART
I. (U)

APR 73 336P
REPT. NO. FTD-MT-24-1676-72

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF MONO.
UNIVERSALNYE AVTOMATICHESKIE TSIFROVYE
VYCHISLITELNYE MASHINY 'URAL-14' INSTRUKTSIYA PO
PROGRAMMIROVANIYU CHAST' I TSENTRALNYE USTROISTVA.
SISTEMA KOMAND PSO.170.001 I NI, N.P., 1968 P1-181,
BY BERNARD L. TAUBER, AND CHARLES T. OSTERTAG,
JR.

DESCRIPTORS: (*COMPUTER PROGRAMMING, INSTRUCTION
MANUALS), (*DIGITAL COMPUTERS, *USSR), MEMORY DEVICES,
INPUT OUTPUT DEVICES, PROGRAMMING LANGUAGES,
ALGORITHMS (U)
IDENTIFIERS: ARITHMETIC AND LOGIC UNITS, CENTRAL
PROCESSING UNITS, *PROGRAMMING MANUALS, TRANSLATIONS,
COMPUTER INFORMATION SECURITY, COMPUTERS (U)

THE BOOK IS PART OF THE PROGRAMMING INSTRUCTIONS
FOR THE 'URAL-14' ELECTRONIC DIGITAL COMPUTER AND
IS DEVOTED TO A DESCRIPTION OF THE ELEMENTARY BLOCK
DIAGRAM OF THE COMPUTER, THE SYSTEM OF INSTRUCTIONS
FOR THE CENTRAL UNITS, AND THE DETAILED ALGORITHMS
FOR THE EXECUTION OF OPERATIONS IN THESE UNITS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 764 363 9/2 12/2
SYRACUSE UNIV N Y

ASSOCIATIVE PROCESSING IN THE SOLUTION OF
NETWORK PROBLEMS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 73 263P ORLANDO, VINCENT A. ;
CONTRACT: F30602-72-C-0281
MONITOR: RADG TR-73-156

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING, OPERATIONS RESEARCH),
MEMORY DEVICES, ALGORITHMS, MATHEMATICAL MODELS,
NETWORKS, COMPUTER PROGRAMS, MULTIPLE OPERATION,
THESES

(U)

IDENTIFIERS: *NETWORK FLOWS, *PARALLEL PROCESSORS,
*ASSOCIATIVE STORAGE, SHORTEST PATH METHOD, FORTRAN,
FORTRAN 4 PROGRAMMING LANGUAGE, TRANSPORTATION MODELS,
DATA MANAGEMENT

(U)

AN ASSOCIATIVE PROCESSOR IS A HIGHLY PARALLEL
COMPUTER POSSESSING THE CAPABILITY OF ADDRESSING DATA
FIELDS BY CONTENT AND PERFORMING LOGICAL AND
ARITHMETIC OPERATIONS SIMULTANEOUSLY ON ALL STORAGE
WORDS. CLASSICAL NETWORK PROBLEMS IN THE FIELD OF
OPERATIONS RESEARCH EXHIBIT A NATURALLY ASSOCIATIVE
DATA STRUCTURE AND HAVE COMPUTATIONAL REQUIREMENTS
SIMILAR TO THE CAPABILITIES OF THE ASSOCIATIVE
PROCESSOR. THE RESEARCH REPORTED IS A QUANTITATIVE
EVALUATION OF THE APPLICABILITY OF THE ASSOCIATIVE
PROCESSOR TO THE SOLUTION OF THIS CLASS OF PROBLEMS.
SPECIFIC EXAMPLES EXAMINED ARE THE MINIMUM PATH,
ASSIGNMENT, TRANSPORTATION, MAXIMUM FLOW AND MINIMUM
COST FLOW PROBLEMS. THE RESULTS OF THIS RESEARCH
EASILY SUPPORT THE CONCLUSION THAT THE ASSOCIATIVE
PROCESSOR IS WELL SUITED TO THE SOLUTION OF THIS
CLASS OF NETWORK PROBLEMS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 764 897 9/2
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER BETHESDA
MD

DESIGN TRADE-OFFS FOR A SOFTWARE
ASSOCIATIVE MEMORY, (U)

MAY 73 56P BERKOWITZ, SIDNEY ;
REPT. NO. NSRDC-3531
PROJ: SR014-03
TASK: SR014-03-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA STORAGE SYSTEMS, SIMULATION),
(*COMPUTER PROGRAMMING, INFORMATION RETRIEVAL), MEMORY
DEVICES, GRAPHICS, SEARCH THEORY (U)
IDENTIFIERS: *ASSOCIATIVE STORAGE, FORTRAN, GRAPHS,
COMPUTERIZED SIMULATION (U)

THE REPORT DESCRIBES AN ASSOCIATIVE (CONTENT-
ADDRESSABLE) COMPUTER MEMORY SIMULATION, CALLED
GIRS (GRAPH INFORMATION RETRIEVAL SYSTEM),
DESIGNED TO HANDLE THE DYNAMIC INSERTION, RETRIEVAL,
AND DELETION OF ARBITRARY SYMBOLIC OR NUMERIC DATA
STRUCTURES. THE MAIN PURPOSE OF THE STUDY IS TO
DEMONSTRATE FUNDAMENTAL TRADE-OFFS BETWEEN TIME,
SPACE, COMPLEXITY, AND FLEXIBILITY IN THE FIELD-LEVEL
OPERATION OF ANY ASSOCIATIVE MEMORY SIMULATION.
SPECIFICALLY, THE PAPER CONCLUDES THAT: A
REDUCTION OF RETRIEVAL TIME IS POSSIBLE AT THE COST
OF A COMPLEX LINKAGE SCHEME AND SLOW INSERTION; THE
DESIGN OF A RANDOM NODE GENERATOR CAN BE OPTIMIZED TO
MATCH THE SCRAMBLING TRANSFORMATION AND REDUCE
RETRIEVAL TIME; A DYNAMIC REORGANIZATION OF PAGES
AND THE USE OF INFERENCE MECHANISMS CAN REDUCE THE
NUMBER OF PAGE FETCHES AND HANDLE COMPLEX QUERIES
WITH MINIMAL STORAGE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 765 175 9/2 12/2
MITRE CORP BEDFORD MASS

A THEORY OF STORAGE SIZING,

(U)

JUL 73 59P VOTAW, D. F. , JR;
REPT. NO. MTR-2294
CONTRACT: F19628-72-C-DDD2
PROJ: AF-572R
MONITOR: ESD TR-72-270

UNCLASSIFIED REPORT

DESCRIPTORS: (*MEMORY DEVICES, DISTRIBUTION THEORY),
QUEUEING THEORY, DATA PROCESSING, STOCHASTIC PROCESSES,
RANDOM VARIABLES, STATISTICAL ANALYSIS, DIFFERENTIAL
EQUATIONS, MATHEMATICAL MODELS (U)

THE RELATIONS BETWEEN THE SIZE OF A STORAGE
FACILITY AND ITS CAPABILITY TO PERFORM ITS SERVICE OF
STORAGE UNDER A STOCHASTIC LOAD ARE EXPLORED. THE
SOLUTIONS THAT ARE DERIVED LEND GUIDANCE TO THE
SIZING OF THE VARIOUS MEMORIES AND BUFFERS OF A
COMPUTER SYSTEM. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 765 391 9/2
ILLINOIS UNIV URBANA COORDINATED SCIENCE LAB

HIGH DENSITY OPTICAL MEMORY. (U)

DESCRIPTIVE NOTE: ANNUAL REPT., 1 JUL 72-30 JUN 73.
JUL 73 16P
CONTRACT: N00014-67-A-0305-0015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*DATA STORAGE SYSTEMS, OPTICAL EQUIPMENT),
(*MEMORY DEVICES, FEASIBILITY STUDIES), POTASSIUM
COMPOUNDS, CHLORIDES, LOGIC CIRCUITS, SODIUM COMPOUNDS,
FLUORIDES, X RAYS, COLOR CENTERS, ELECTRON IRRADIATION,
SODIUM CHLORIDE (U)
IDENTIFIERS: OPTICAL CRYSTAL MEMORIES, OPTICAL STORAGE
DEVICES, ACOUSTOOPTICS, INTERACTIONS, POTASSIUM
CHLORIDE (U)

THE CONTINUED DEVELOPMENT OF THE PHOTOCHROMIC MEMORY
HAS RESULTED IN THE DESIGN AND CONSTRUCTION OF A
SECOND GENERATION KCL MEMORY SYSTEM AND AN
ENHANCEMENT OF THE PERFORMANCE OF THE ORIGINAL
SYSTEM. APPARATUS FOR COLORING MEMORY CRYSTALS BY
MEANS OF ELECTRON BOMBARDMENT HAS BEEN DEVELOPED
MAKING POSSIBLE THE MATCHING OF CRYSTAL THICKNESS TO
THE DEPTH OF FIELD OF THE FOCUSING LENS. STUDIES OF
KCL:NaCl PROPERTIES INDICATE THAT THERMO-
ELECTRIC COOLING UNITS MAY BE USED TO SIMPLIFY THE
CRYOSTAT UNITS FOR HOUSING THE CRYSTAL. IN THE
IMMEDIATE FUTURE, THE CONTROL LOGIC WILL BE
INTEGRATED WITH THE NEW MEMORY. THIS WILL
FACILITATE THE STORAGE AND RETRIEVAL OF A LARGE
NUMBER OF BITS AND ALLOW INTERFACING THE MEMORY WITH
A COMPUTER FOR LONG TERM, HIGH SPEED RELIABILITY
TESTS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 765 937 9/2
TORONTO UNIV (ONTARIO) DEPT OF ELECTRICAL
ENGINEERING

LOGIC ARRAY USING CHARGE-TRANSFER
DEVICES,

(U)

SEP 72 2P MOK, T. D. ; SALAMA, C. A.
T. i

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN ELECTRONICS LETTERS, V8
N20, 5 OCT 72.

DESCRIPTORS: (*MEMORY DEVICES, SEMICONDUCTOR DEVICES),
SHIFT REGISTERS, LOGIC CIRCUITS, GATES(CIRCUITS),
DESIGN, CANADA (U)
IDENTIFIERS: CHARGE COUPLED DEVICES, *SEMICONDUCTOR
COMPUTER STORAGE (U)

A LOGIC ARRAY THAT PERFORMS BOTH AND AND OR
FUNCTIONS USING CHARGE-TRANSFER DEVICES IS PROPOSED.
POTENTIAL BARRIERS ARE USED TO CONTROL THE
DIRECTIONALITY OF CHARGE TRANSFER AND PERFORM THE
LOGIC FUNCTIONS. THE BASIC OPERATION OF THE DEVICES
IS DESCRIBED AND ILLUSTRATED USING 2-PHASE CHARGE-
COUPLED DEVICES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 766 279 9/2
SYRACUSE UNIV N Y DEPT OF ELECTRICAL AND COMPUTER
ENGINEERING

PARALLEL PROCESSING CHARACTERISTICS AND
IMPLEMENTATION OF DATA MANIPULATING
FUNCTIONS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUL 73 84P GENG-TSE-YUN ;
CONTRACT: F30602-72-C-0281
MONITOR: RADC TR-73-189

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING, LOGIC CIRCUITS),
SWITCHING CIRCUITS, SHIFT REGISTERS,
FUNCTIONS(MATHEMATICS), DESIGN, THEOREMS
IDENTIFIERS: LOGIC DESIGN, *PARALLEL PROCESSORS,
ARITHMETIC AND LOGIC UNITS, ASSOCIATIVE STORAGE,
*SEQUENTIAL CIRCUITS, ILLIAC 4 COMPUTERS

(U)

(U)

THE REPORT SHOWS THAT THERE EXISTS A CLASS OF
FUNCTIONS, CALLED DATA MANIPULATING FUNCTIONS, IN
SEQUENTIAL AS WELL AS PARALLEL PROCESSORS. THE
CIRCUITS USED TO ACHIEVE THESE FUNCTIONS CAN BE
CONSIDERED TO FORM AN INDEPENDENT FUNCTIONAL BLOCK,
CALLED A DATA MANIPULATOR. A BASIC ORGANIZATION
APPLICABLE TO BOTH SEQUENTIAL AND PARALLEL PROCESSORS
IS THEN SUGGESTED. THE MAIN DEVIATION OF A
PARALLEL PROCESSOR ORGANIZATION FROM THE CONVENTIONAL
VON NEUMANN ORGANIZATION IS SEEN TO BE IN THE BIS
(BIT-SLICE) MANIPULATING FUNCTIONS. A
COMPREHENSIVE SET OF BIS MANIPULATING FUNCTIONS
(CLASSIFIED IN FOUR CATEGORIES: PERMUTING,
REPLICATING, SPACING AND MASKING) IS GIVEN. IN
ADDITION, IT IS SHOWN THAT THE DATA MANIPULATOR
DESIGNS PRESENTED IN THIS REPORT ARE EXTREMELY
FLEXIBLE TO SUIT THE REQUIREMENTS OF VARIOUS PARALLEL
PROCESSORS. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 766 517 9/2
LOGICON INC SAN PEDRO CALIF

AN EXAMINATION OF TWO FAULT-TOLERANT
ARCHITECTURES,

(U)

AUG 73 214P LAURO, JOSEPH A. ; O'BRIEN,
FRANK J. ; SWITZER, DAVID K. ;
REPT. NO. CSS-7332-R1410
CONTRACT: F04701-72-C-0408
MONITOR: SAMSO TR-73-273

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPILERS, DESIGN), (*LOGIC CIRCUITS,
RELIABILITY), COMPUTER PROGRAMMING, INPUT OUTPUT
DEVICES, SHIFT REGISTERS, FAILURE, DETECTION (U)
IDENTIFIERS: ARITHMETIC AND LOGIC UNITS, FORTRAN,
COMPUTERIZED SIMULATION, *FAULT TOLERANT COMPUTING (U)

TWO FAULT-TOLERANT COMPUTER DESIGNS WERE EXAMINED.
FOR EACH DESIGN A FUNCTIONAL SIMULATOR WAS
IMPLEMENTED AND AN EXECUTIVE PROGRAM, RECOVERY
SOFTWARE, AND APPLICATION PROGRAM WAS CODED. THE
MAJOR CONCERN IN THE EXECUTIVE PROGRAM DEVELOPMENT
WAS THE HANDLING OF INPUT/OUTPUT AND INTERRUPTS IN
THE PRESENCE OF FAULTS. SIMILARLY, THE DEVELOPMENT
OF THE RECOVERY SOFTWARE REVEALED THAT THE
PRESERVATION OF THE APPLICATION WAS MORE DIFFICULT
THAN THE RECOVERY OF THE HARDWARE ITSELF. THE
APPLICATION WAS SELECTED FROM THE TITAN 3C FLIGHT
PROGRAM. A SIMPLE COMPILER WAS DEVELOPED TO
GENERATE THE APPLICATION PROGRAM CODE AND
AUTOMATICALLY INSERT ROLLBACK POINTS. THIS
APPROACH ELIMINATED ANY CONCERN FOR FAULT TOLERANCE
ON THE PART OF THE APPLICATION PROGRAMMER.
HOWEVER, A SIGNIFICANT OVERHEAD IN TERMS OF MEMORY
SPACE AND EXECUTION TIME DUE TO FAULT TOLERANCE
RESULTED. EACH DESIGN WAS EXAMINED AT A FUNCTIONAL
LEVEL RELATIVE TO ITS COMPUTATION CAPABILITIES AND
EFFECTIVENESS IN PROVIDING FAULT TOLERANCE. WEAK
POINTS WERE IDENTIFIED IN EACH DESIGN AND
RECOMMENDATIONS FOR CORRECTING THEM WERE PROVIDED.
NEITHER DESIGN COMPLETELY HANDLED CATASTROPHIC
FAILURES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 766 974 9/2
STANFORD RESEARCH INST MENLO PARK CALIF

A STUDY OF FAULT-TOLERANT COMPUTING. (U)

DESCRIPTIVE NOTE: FINAL REPT. 12 JAN 72-15 MAY 73,
JUL 73 228P NEUMANN, PETER G. ; GOLDBERG,
JACK ; LEVITT, KARL N. ; WENSLEY, JOHN H. ;
CONTRACT: N00014-72-C-0254, ARPA ORDER-1998
PROJ: SRI-1693

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING, MAINTENANCE),
(*COMPUTERS, RELIABILITY(ELECTRONICS)), REAL TIME,
MULTIPLE OPERATION, LOGIC CIRCUITS,
FAILURE(ELECTRONICS), FAILURE, COST EFFECTIVENESS,
REDUNDANT COMPONENTS, DESIGN, STATE-OF-THE-ART REVIEWS,
DATA STORAGE SYSTEMS (U)
IDENTIFIERS: LARGE SCALE INTEGRATED CIRCUITS,
COMPUTERS, MULTIPLE OPERATION, ARITHMETIC AND LOGIC
UNITS, VIRTUAL MEMORIES, COMPUTER SELF MAINTENANCE,
*FAULT TOLERANT COMPUTING, FAULT DETECTION (U)

THE REPORT PRESENTS THE RESULTS OF A STUDY OF
FAULT-TOLERANT COMPUTING. EXISTING AND NEW
ARCHITECTURAL TECHNIQUES ARE EVALUATED FOR USE IN
COST-EFFECTIVE SYSTEMS ATTAINING DESIRED MEASURES OF
CORRECTNESS, AVAILABILITY AND RECOVERY. VARIOUS
ARCHITECTURES AND APPLICATIONS ARE CONSIDERED.
APPENDICES CONTAIN A BRIEF CENSUS OF 35 FAULT-
TOLERANT SYSTEMS, AND A CONCISE SURVEY OF 17
REPRESENTATIVE SYSTEMS, AS WELL AS DETAILED RESULTS
ON RELIABLE MEMORIES AND ARITHMETIC. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 768 024 9/2
DEFENSE NUCLEAR AGENCY WASHINGTON D C

GENERALIZED INFORMATION RETRIEVAL LANGUAGE
(GIRL): COMPUTER PROGRAM (CARD DECK); (U)

SEP 73 IV LONG, JOHN I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: AVAILABLE TO NON-U.S. ADDRESSES
\$219.00/DECK.

DESCRIPTORS: (*COMPUTER PROGRAMMING, INFORMATION
RETRIEVAL), PUNCHED CARDS (U)

IDENTIFIERS: GIRL PROGRAMMING LANGUAGE, DATA
MANAGEMENT, COBOL, BURROUGHS 2500 COMPUTERS, BURROUGHS
3500 COMPUTERS (U)

INCLUDED ARE 2046 CARDS FOR THE GENERALIZED
INFORMATION RETRIEVAL LANGUAGE TO PERMIT THE
NON-COMPUTER-ORIENTED PERSON TO ACCESS, SELECT, SORT,
PRINT AND SUMMARIZE RECORDS THAT ARE ESTABLISHED ON
TAPE, CARDS, OR DISK. (MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 768 091 9/5 19/1
HARRY DIAMOND LABS WASHINGTON D C

THIN-FILM HYBRID MICROCIRCUITRY. PART I.
BOXCAR CIRCUIT FOR A CURRENT HDL FUSE
SYSTEM.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
MAY 73 17P EDWARDS, ADOLPH J. ;
REPT. NO. HDL-TM-73-10
PROJ: DA-1-X-263302-D-212, HDL-635921

UNCLASSIFIED REPORT

DESCRIPTORS: (*INTEGRATED CIRCUITS, SAMPLING), VIDEO
SIGNALS, DESIGN, MICROELECTRONICS, PHOTOENGRAVING,
FILMS, FUZES(ORDNANCE)

(U)

IDENTIFIERS: THIN FILMS, COMPUTER AIDED DESIGN,
*HYBRID CIRCUITS, *MICROMINIATURIZATION

(U)

A THIN-FILM HYBRID VERSION OF THE BOXCAR CIRCUIT
FOR A CURRENT HARRY DIAMOND LABORATORIES FUZE
SYSTEM WAS DEVELOPED. A SINGLE CIRCUIT WAS LAID
OUT AND A COMPUTER PROGRAM WRITTEN TO GENERATE 4
IDENTICAL CIRCUIT PATTERNS USING A COMPUTER-TAPE
DRIVEN PLOTTER. THE RESISTOR-CONDUCTOR PATTERNS
WERE PRODUCED BY STANDARD PHOTOLITHOGRAPHIC
TECHNIQUES, AND DISCRETE CHIP DEVICES (DIODES,
CAPACITORS, AND TRANSISTORS) WERE ATTACHED WITH
CONDUCTING EPOXY CEMENT. CONNECTIONS TO THE CHIP
DEVICES AND TO LEAD-OUT PINS WERE MADE BY
THERMOCOMPRESSION WIRE BONDING TO COMPLETE THE
CIRCUIT FABRICATION. PRELIMINARY ELECTRICAL TESTS
INDICATED ACCEPTABLE INSERTION LOSSES OF
APPROXIMATELY 0.6 DB AND HIGH-FREQUENCY ROLL-OFF
POINTS IN THE EXPECTED FREQUENCY RANGE.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 768 423 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

CERTAIN ALGORITHMS OF ORGANIZATION OF
COMPUTER MEMORY DISTRIBUTION, (U)

OCT 73 19P TSULADZE, M. G. ;
REPT. NO. FTD-HT-23-58-74
PROJ: FTD-T74-05-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF VYCHISLITELNYI
TSENTR, EREVAN. TRUDY (USSR) V10 N1 P58-72 1970, BY
VICTOR MESENZEFF.

DESCRIPTORS: (*COMPUTER PROGRAMMING, ALGORITHMS),
MATHEMATICAL LOGIC, MEMORY DEVICES, CONTROL SEQUENCES,
USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

CERTAIN ALGORITHMS OF ORGANIZATION OF COMPUTER
MEMORY DISTRIBUTION--TRANSLATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 768 651 8/7 8/9 13/2 9/2
OHIO STATE UNIV RESEARCH FOUNDATION COLUMBUS

FINITE ELEMENT ANALYSIS OF STRESSES,
DEFORMATIONS AND PROGRESSIVE FAILURE OF NON-
HOMOGENEOUS FISSURED ROCK - COMPUTER
PROGRAMS ON MAGNETIC TAPE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
MAR 73 1V SANDHU, RANBIR S. ;
REPT. NO. OSURF-3177-73-3F
CONTRACT: HD210017, ARPA ORDER-1579
PROJ: OSURF-3177

UNCLASSIFIED REPORT

AVAILABILITY: SPECIFY TAPE RECORDING MODE DESIRED:
7 TRACK, 556 AND 800 BPI, ODD AND EVEN PARITY; OR 9
TRACK, 800 BPI, ODD PARITY. INCLUDES AD-768 649
(USERS MANUAL), AND AD-768 650 (COMPUTER
PROGRAMS).

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*ROCK, MECHANICAL PROPERTIES),
(*UNDERGROUND STRUCTURES, STRESSES), (*MAGNETIC TAPE,
COMPUTER PROGRAMS), MINING ENGINEERING,
FOUNDATIONS(STRUCTURES), CONSTRUCTION, DEFORMATION,
ELASTIC PROPERTIES, PLASTIC PROPERTIES, CRACK
PROPAGATION, FRACTURE(MECHANICS), FAILURE(MECHANICS) (U)
IDENTIFIERS: FORTRAN, IBM 370/165 COMPUTERS, FINITE
ELEMENT ANALYSIS (U)

THE OBJECTIVE OF THIS RESEARCH PROGRAM WAS
DEVELOPMENT OF FINITE ELEMENT PROCEDURES FOR
PREDICTION OF STRESSES AND DEFORMATIONS IN THE
VICINITY OF UNDERGROUND EXCAVATION. THE MAGNETIC
TAPE CONTAINS THE COMPUTER PROGRAMS WRITTEN IN
FORTRAN FOR AN IBM 370/165 COMPUTER. (MODIFIED
AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 768 978 9/2
SYRACUSE UNIV N Y

ASSOCIATIVE COMPUTATIONS OF SOME MATHEMATICAL
PROBLEMS,

(U)

AUG 73 85P CHENG, WEI-TIH ; FENG, TSE-
YUN ;
CONTRACT: F30602-72-C-0281
MONITOR: RADC TR-73-229

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMMING, NUMERICAL
ANALYSIS), MEMORY DEVICES, INTEGRAL TRANSFORMS, FOURIER
ANALYSIS, PARTIAL DIFFERENTIAL EQUATIONS,
MATRICES (MATHEMATICS), LOGIC CIRCUITS, MULTIPLE
OPERATION, SEARCH THEORY

(U)

IDENTIFIERS: ASSOCIATIVE STORAGE, FAST FOURIER
TRANSFORM, FOURIER TRANSFORMATION, ARITHMETIC AND
LOGIC UNITS, PARALLEL PROCESSORS, ASSOCIATIVE
PROCESSORS, COMPUTATION

(U)

ASSOCIATIVE PROCESSING PROVIDES A NATURAL
COMBINATION OF ARITHMETIC-LOGIC AND SEARCH-RETRIEVAL
CAPABILITIES WHICH IS A DESIRED CHARACTERISTIC FOR
MANY MATHEMATICAL PROBLEMS. IN THIS REPORT AN
ASSOCIATIVE PROCESSOR WHICH HAS A DATA MANIPULATOR AS
A SEPARATE FUNCTIONAL UNIT FOR PREPARING OPERANDS IS
FIRST DESCRIBED. IN ORDER TO EVALUATE THE
EFFECTIVENESS OF SUCH A SYSTEM, A NUMBER OF
FUNDAMENTAL MATHEMATICAL PROBLEMS WHICH ARE USEFUL
FOR A BROAD RANGE OF APPLICATIONS ARE STUDIED.
THESE ARE, AMONG OTHERS, FAST FOURIER TRANSFORM,
PARTIAL DIFFERENTIAL EQUATIONS, AND MATRIX
OPERATIONS. NEW AND MODIFIED ALGORITHMS ARE
DEVELOPED. INEFFICIENT WORD-SEQUENTIAL LOADING AND
PROCESSING ARE MINIMIZED AND REDUNDANT STORAGE IS
ELIMINATED. THE EXECUTION TIMES FOR SOLVING THESE
MATHEMATICAL PROBLEMS UNDER VARIOUS CONDITIONS ARE
COMPUTED, ANALYZED, AND COMPARED WITH THOSE REQUIRED
BY TWO OTHER ASSOCIATIVE ORGANIZATIONS. IT IS
SHOWN THAT WITH THE SIMPLEST ARITHMETIC-LOGIC UNITS
AND BIS (BIT-SLICE)-SEQUENTIAL DATA MANIPULATING
CAPABILITY ASSUMED IN THE PROPOSED ORGANIZATION, THE
IMPROVEMENTS IN SYSTEM PERFORMANCE AND STORAGE
REQUIREMENTS ARE SIGNIFICANTLY AND CONSISTENTLY
BETTER THAN THOSE OF EXISTING TECHNIQUES.
(MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 770 552 9/2
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS

INTERCONNECTIONS FOR PARALLEL MEMORIES TO
UNSCRAMBLE P-ORDERED VECTORS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. NO. 74,
MAY 73 54P SWANSON, ROGER C. ;
REPT. NO. SU-SEL-73-032, STAN-CS-73-388
CONTRACT: N00014-67-A-0112-0044, NSF-GJ-1180
PROJ: AF-6970, AF-6960

UNCLASSIFIED REPORT

DESCRIPTORS: *PARALLEL PROCESSORS, *MEMORY DEVICES,
LOGIC CIRCUITS, CIRCUIT INTERCONNECTIONS, MODULAR
CONSTRUCTION, MATHEMATICAL LOGIC, THEOREMS
IDENTIFIERS: ILLIAC 4 COMPUTERS, *LOGIC
DESIGN

(U)

(U)

SEVERAL METHODS ARE BEING CONSIDERED FOR STORING
ARRAYS IN A PARALLEL MEMORY SYSTEM SO THAT VARIOUS
USEFUL PARTITIONS OF AN ARRAY CAN BE FETCHED FROM THE
MEMORY WITH A SINGLE ACCESS. SOME OF THESE METHODS
FETCH VECTORS IN AN ORDER SCRAMBLED FROM THAT
REQUIRED FOR A COMPUTATION. THE PAPER CONSIDERS
THE PROBLEM OF UNSCRAMBLING SUCH VECTORS WHEN THE
VECTORS BELONG TO A CLASS CALLED P-ORDERED VECTORS
AND THE MEMORY SYSTEM CONSISTS OF A PRIME NUMBER OF
MODULES. PAIRS OF INTERCONNECTIONS ARE DESCRIBED
THAT CAN UNSCRAMBLE P-ORDERED VECTORS IN A NUMBER OF
STEPS THAT GROW AS THE SQUARE ROOT OF THE NUMBER OF
MEMORIES. LOWER AND UPPER BOUNDS ARE GIVEN FOR THE
NUMBER OF STEPS TO UNSCRAMBLE THE WORST CASE VECTOR.
THE UPPER BOUND CALCULATION THAT IS DERIVED ALSO
PROVIDES AN UPPER BOUND ON THE MINIMUM DIAMETER OF A
STAR POLYGON WITH A FIXED NUMBER OF NODES AND TWO
INTERCONNECTIONS. AN ALGORITHM IS GIVEN THAT HAS
PRODUCED OPTIMAL PAIRS OF INTERCONNECTIONS FOR ALL
SIZES OF MEMORY THAT HAVE BEEN TRIED. THE
ALGORITHM APPEARS TO FIND OPTIMAL PAIRS FOR ALL
MEMORY SIZES, BUT NO PROOF HAS YET BEEN FOUND.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 771 175 9/2 6/12
MICHIGAN UNIV ANN ARBOR DEPT OF ELECTRICAL
ENGINEERING

FEASIBILITY OF EXECUTING MIMS ON INTERDATA
80.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
OCT 73 43P BAUER, MICHAEL F. ; IRANI,
KEKI B. ;
CONTRACT: F30602-73-C-0001
PROJ: AF-5581
TASK: 558102
MONITOR: RADC TR-73-301

UNCLASSIFIED REPORT

DESCRIPTORS: *INFORMATION PROCESSING;
*MINICOMPUTERS, COMPUTER PROGRAMMING, FORTRAN,
ALGORITHMS, MEDICAL SERVICES, FEASIBILITY
STUDIES

(U)

IDENTIFIERS: INTERDATA 80 MINICOMPUTERS, CDC 6500
COMPUTERS, CDC 6600 COMPUTERS, MIMS(MEDICAL
INFORMATION MANAGEMENT SYSTEM), MEDICAL
INFORMATION MANAGEMENT SYSTEM, FILE STRUCTURES,
COMPUTER STORAGE MANAGEMENT

(U)

THE REPORT EXAMINES THE FEASIBILITY OF IMPLEMENTING
LARGE INFORMATION MANAGEMENT SYSTEM ON MINI-
COMPUTERS. THE MEDICAL INFORMATION
MANAGEMENT SYSTEM AND THE INTERDATA 80 MINI-
COMPUTER WERE SELECTED AS BEING REPRESENTATIVE
SYSTEMS. THE FORTRAN PROGRAMS CURRENTLY BEING
USED IN MIMS ARE VIEWED IN LIGHT OF THE LIMITATIONS
OF THE INTERDATA MACHINE, AND IT IS DISCOVERED THAT
IT WILL BE IMPOSSIBLE TO MAKE THEM WORK WITHOUT LARGE
AND TIME-CONSUMING ALTERATIONS. IT IS CONCLUDED
THAT IT IS POSSIBLE TO IMPLEMENT MIMS ON THE NEW
MACHINE, BUT IT WILL BE MORE PRACTICAL TO DO SO BY
WRITING NEW PROGRAMS, RATHER THAN MAKING DO WITH THE
OLD. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 771 284 9/2
BROWN UNIV PROVIDENCE R I CENTER FOR COMPUTER AND
INFORMATION SCIENCES

AN INTERACTIVE SOFTWARE ENGINEERING TOOL
FOR MEMORY MANAGEMENT AND USER PROGRAM
EVALUATION,

(U)

NOV 73 24P MILLBRANDT, WOLFGANG W. ;
RODRIGUEZ-ROSELL, JUAN ;
CONTRACT: N00014-67-A-0191-0023, NSF-GJ-28401

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMMING, MEMORY DEVICES,
MONITORING, FORTRAN (U)
IDENTIFIERS: *VIRTUAL MEMORY, *COMPUTER STORAGE
MANAGEMENT, INTERACTIVE COMPUTER GRAPHICS, IBM
360/67 COMPUTERS (U)

AS THE USE OF VIRTUAL MEMORY BECOMES MORE AND MORE
ACCEPTED, THE PROBLEM OF EFFECTIVE STORAGE MANAGEMENT
BECOMES MORE AND MORE IMPORTANT. TO DATE MOST
EFFORTS TO OPTIMIZE THE USE OF MEMORY HAVE BEEN
DIRECTED AT DEVISING MEMORY MANAGEMENT STRATEGIES AT
THE OPERATING SYSTEM LEVEL THAT MINIMIZE THE NUMBER
OF PAGE FAULTS. LITTLE EFFORT HAS BEEN MADE TO
PROVIDE THE PROGRAMMER WITH SUITABLE TOOLS FOR MAKING
HIS PROGRAMS 'MORE LOCAL'. TO FILL THIS NEED THE
BROWN UNIVERSITY DISPLAY FOR WORKING SET
REFERENCES WAS DEVELOPED, ENABLING THE PROGRAMMER
TO DIRECTLY MONITOR THE PAGE REFERENCING BEHAVIOR OF
HIS MODULES. THIS INTERACTIVE GRAPHICS MEASUREMENT
SYSTEM USES A SATELLITE PROCESSOR TO DISPLAY USER
PROGRAM MEMORY REFERENCES AND WORKING SET PARAMETERS.
THE SYSTEM AND SEVERAL PARAMETERS USED TO EVALUATE
PROGRAM MEMORY UTILIZATION ARE DISCUSSED. PRACTICAL
PROGRAMMING GUIDELINES AND PACKAGING TECHNIQUES TO
IMPROVE MEMORY USAGE IN A VIRTUAL MEMORY ENVIRONMENT
ARE PRESENTED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 771 428 9/2

MASSACHUSETTS INST OF TECH CAMBRIDGE PROJECT MAC

PROJECT MAC PROGRESS REPORT X, JULY 1972-
JUNE 1973,

(U)

DEC 73 154P FREDKIN, E. ;
CONTRACT: N00014-70-A-0362-0001, N00014-70-A-0362-
0006

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT AD-756 689.

DESCRIPTORS: *COMPUTER PROGRAMMING, *DATA
PROCESSING, *ARTIFICIAL INTELLIGENCE, PROGRAMMING
LANGUAGES, SYSTEMS ENGINEERING, TIME SHARING,
MULTIPLE OPERATION, AUTOMATA, REAL TIME,
INFORMATION SYSTEMS, GRAPHICS

(U)

IDENTIFIERS: MAC PROJECT, MULTICS SYSTEM,
INTERACTIVE COMPUTER GRAPHICS, *DATA PROCESSING
SYSTEMS, COMPUTER NETWORKS, COMPUTER STORAGE
MANAGEMENT, AUTOMATA THEORY

(U)

CONTENTS: COMPUTER SYSTEMS RESEARCH;
PROGRAMMING TECHNOLOGY; AUTOMATIC PROGRAMMING
DIVISION; OTHER RESEARCH; PROJECT MAC
PUBLICATIONS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 771 545 9/2
WESTINGHOUSE RESEARCH LABS PITTSBURGH PA

MOBILE CENTRAL SWITCHES (AN ELECTRON-
LITHOGRAPHY APPLICATION).

(U)

DESCRIPTIVE NOTE: FINAL REPT. 9 JUN 69-30 JUN 72,
SEP 73 300P MALMBERG, PAUL R. ;
O'KEEFE, TERRENCE W. ; SOPIRA, MICHAEL M. ;
SCALA, LUCIANO C. ;
REPT. NO. 6F6-LSMEM-R1
CONTRACT: F30602-69-C-0280
PROJ: AF-4519, AF-6523
TASK: 451903, 652301
MONITOR: RADC TR-73-275

UNCLASSIFIED REPORT

DESCRIPTORS: •MEMORY DEVICES, •LOGIC CIRCUITS,
•FABRICATION, LITHOGRAPHY, ELECTRON BEAMS,
INTEGRATED CIRCUITS
IDENTIFIERS: •SEMICONDUCTOR COMPUTER STORAGE,
ELECTRON BEAM LITHOGRAPHY, •RANDOM ACCESS COMPUTER
STORAGE

(U)

(U)

MAXIMUM DENSITY CIRCUIT FABRICATION TECHNIQUES WERE
APPLIED TO THE FABRICATION OF A 1024-BIT RANDOM
ACCESS MEMORY BASED ON A 2-TRANSISTOR VERSATILE
MEMORY/CROSSPOINT SWITCH CELL OF RADC DESIGN.
ARRANGED AS A 32 WORD BY 32 BIT MATRIX OF CELLS ON
20 X 24 MICRON CENTERS, THE MEMORY CHIP DESIGN
INCLUDES ADDRESS DECODING FOR SELECTIVE ENABLING OF
THREE CONTROL BUSES PER WORD TO PERMIT OPERATION OF
THE DEVICE AS A RANDOM ACCESS MEMORY, ASSOCIATIVE
MEMORY, CROSSPOINT SWITCH, OR SAMPLE AND HOLD SWITCH.
A TWO MICRON MINIMUM GEOMETRY DESIGN RULE WAS
FOLLOWED. FOURTEEN MEMORY CIRCUITS AND 4 TEST
CIRCUITS WERE COMPLETED AND THE BEST UNITS WERE
MOUNTED ON CERAMIC CARRIERS WITH 50-PIN EDGE
CONNECTORS. STATIC AND DYNAMIC TESTS OF THESE
DEVICES SHOWED OPERATING TRANSISTORS, DECODERS, AND A
MEMORY WORD USED FOR RESET OF DATA LINES. ELECTRON
BEAM FABRICATION TECHNIQUES WERE ADVANCED DURING THE
PROGRAM. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 771 793 9/2
INFORMATICS INC ROCKVILLE MD

INTELLIGENCE SYSTEM DESIGNER'S MEMORY
EVALUATION PROGRAM.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUN 72-AUG 73,
NOV 73 131P SAVAS, MARY ANN ; CORLEY,
STEVEN ;
REPT. NO. TR-73-1561-1
CONTRACT: F30602-72-C-0380
MONITOR: RADC TR-73-328

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, *COST EFFECTIVENESS,
*COMPUTERIZED SIMULATION, *COMPUTER PROGRAMMING,
INSTRUCTION MANUALS, PERFORMANCE (ENGINEERING),
FORTRAN

(U)

IDENTIFIERS: PERFORMANCE EVALUATION, HIS 635
COMPUTERS, GESIM PROGRAMMING LANGUAGE

(U)

THE SELECTION OF STORAGE EQUIPMENT IS AN INTEGRAL PART OF INTELLIGENCE SYSTEMS DESIGN. INTELLIGENCE DATA HANDLING SYSTEMS ARE CHARACTERIZED BY LARGE FILES WHOSE ELEMENTS ARE CONSTANTLY ACCESSED, UPDATED, AND/OR DELETED BY A NUMBER OF PROCESSES AND PROCEDURES. TOO OFTEN, THE MINIMUM COST OF A SYSTEM IS NOT ATTAINED DUE TO THE DIFFICULTIES OF COMPARING THE COST AND/OR TECHNICAL PERFORMANCE OF VARIOUS STORAGE DEVICES. THE MEMORY EVALUATION PROGRAM HAS BEEN DESIGNED TO ASSIST IN THE DETERMINATION OF THE BEST OR, IN SOME CASES, A FEASIBLE SOLUTION TO MEET STORAGE REQUIREMENTS. IT IS A SIMULATION PROGRAM BASED UPON MATHEMATICALLY-SOUND PRINCIPLES THAT CLOSELY PARALLEL THE PROCEDURES USED BY LARGE-SCALE COMPUTERS TO PERFORM INPUT/OUTPUT OPERATIONS WITH STORAGE DEVICES. THEREFORE, IT IS POSSIBLE TO STUDY MORE ALTERNATIVE SOLUTIONS AND TO HAVE MORE PERFORMANCE DATA AVAILABLE WITH WHICH TO PERFORM COMPARATIVE ANALYSES. ALGORITHMS FOR EVALUATING MAGNETIC TAPE DEVICES, AND DIRECT ACCESS STORAGE DEVICES, HAVE BEEN INCLUDED IN THE SIMULATION PROGRAMS. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 018 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

THE POSSIBILITY OF CONSTRUCTION OF AN
ALGORITHMIC GENERAL-PURPOSE HYBRID
COMPUTER,

(U)

NOV 73 14P PUKHOV, G. E. ;
REPT. NO. FTD-HT-23-319-74
PROJ: FTD-T74-05-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF AKADEMIYA NAUK
URSR, KIEV. INSTITUT KIBERNETIKI SEMINAR PO
METODAM MATEMATICHESKOGO MODELIROVANIYA I TEORII
ELEKTRICHESKIKH TSEPEI. TRUDY SEMINARA, N9 P3-9
1971, BY FRANK C. VAUGHN.

DESCRIPTORS: *HYBRID COMPUTERS, ALGORITHMS, MEMORY
DEVICES, LOGIC CIRCUITS, PARTIAL DIFFERENTIAL
EQUATIONS, MATRICES(MATHEMATICS), TRANSLATIONS,
USSR

(U)

IN THE PRESENT WORK AN ATTEMPT IS MADE TO EXAMINE
CERTAIN PROBLEMS RELATIVE TO THE ALGORITHMIC GENERAL-
PURPOSE HYBRID COMPUTER WHICH HAS THE FOLLOWING
COMPONENTS: A COMMON DIGITAL MEMORY, A COMMON
CONTROL UNIT AND TWO ARITHMETIC DEVICES, THE FIRST OF
WHICH IS DIGITAL AND THE SECOND IS A CODE-CONTROLLED
ALGEBRAIC CONVERTER OF CONTINUOUS ELECTRICAL
VOLTAGES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 165 8/7 9/2
SYSTEMS SCIENCE AND SOFTWARE LA JOLLA CALIF

THE FINITE ELEMENT COMPUTER CODE
3NONLIN'.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
MAY 73 IV BALIGH, MOHSEN M. ;
REPT. NO. SSS-R-73-1658-PC
CONTRACT: HD220047

UNCLASSIFIED REPORT

PUNCHED CARDS 8200.00/DECK OF 1597 CARDS.
SUPPLEMENTARY NOTE: PRICE INCLUDES TECHNICAL REPORT AD-
764 099. SPONSORED IN PART BY ADVANCED RESEARCH
PROJECTS AGENCY, ARLINGTON, VA.

DESCRIPTORS: *ROCK MECHANICS, *COMPUTER PROGRAMS,
*PUNCHED CARDS, COMPRESSIVE PROPERTIES, TEST
METHODS, COMPUTERIZED SIMULATION, CRACKS, MINING
ENGINEERING, TRIAXIAL STRESSES, LOAD(FORCES),
PLASTIC FLOW, NUMERICAL ANALYSIS

(U)

IDENTIFIERS: NONLIN COMPUTER CODE, FINITE ELEMENT
ANALYSIS, COMPRESSION TESTS

(U)

THE PROGRAM WAS DEVELOPED UNDER RESEARCH CONTRACT
HD220047 'A NUMERICAL STUDY OF UNIAXIAL AND
TRIAxIAL ROCK COMPRESSION TESTS.' THE
FINAL TECHNICAL REPORT FROM THIS CONTRACT, WHICH
DESCRIBES THE USE OF THIS PROGRAM, IS CURRENTLY
AVAILABLE FROM NTIS UNDER AD-764 099 AT A COST OF
\$3.00 FOR PAPER COPY OR \$1.45 FOR MICROFICHE.
TO ACCOMPLISH THE STUDY, THE TWO-DIMENSIONAL,
QUASI-STATIC FINITE ELEMENT CODE NONLIN WAS
DEVELOPED TO SOLVE PROBLEMS INVOLVING NONLINEAR,
NONHOMOGENEOUS, AND ANISOTROPIC MATERIALS.
NONLINEARITIES ARE STUDIED BY MEANS OF THE
INCREMENTAL OR THE ITERATION TECHNIQUES, OR A
COMBINATION OF THE TWO. TO ACHIEVE FAST
CONVERGENCE USING THE STIFFNESS PERTURBATION
TECHNIQUE, NEW ITERATION SCHEME WERE DEVELOPED WHICH
MADE THE SOLUTION OF A WIDER CLASS OF PROBLEMS
POSSIBLE. DISCONTINUITIES IN DISPLACEMENTS THAT
ARISE AT INTERFACES OR AT JOINTS AND CRACKS IN ROCKS
WERE POSSIBLE TO ANALYZE AFTER A SPECIAL ELEMENT, WAS
DEVELOPED AND INCORPORATED IN THE CODE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 410 9/2
DEFENSE INTELLIGENCE AGENCY WASHINGTON D C

MACHINE INDEPENDENT DATA MANAGEMENT SYSTEM
(MIDMS) SYSTEM TAPE.

(U)

AUG 73 1V
REPT. NO. DIA-U-065

UNCLASSIFIED REPORT

AVAILABILITY: FOREIGN SALES SUBJECT TO NEGOTIATION.
SPECIFY TAKE RECORDING MODE DESIRED: 7 TRACK, 556 AND
800 BPI, ODD AND EVEN PARITY; OR 9 TRACK, 800 BPI, ODD
PARITY.

DESCRIPTORS: *COMPUTER PROGRAMMING, *DATA
MANAGEMENT, *MAGNETIC TAPE, INFORMATION RETRIEVAL,
MEMORY DEVICES

(U)

IDENTIFIERS: *MIDMS(MACHINE INDEPENDENT DATA
MANAGEMENT SYSTEM), MACHINE INDEPENDENT DATA
MANAGEMENT SYSTEM, *DATA MANAGEMENT SYSTEMS

(U)

THIS 9-TRACK, 800 BPI, NON-LABELED TAPE CONTAINS
ALL THE SOURCE, OBJECT PROGRAMS AND PROCEDURES OF THE
MACHINE INDEPENDENT DATA MANAGEMENT SYSTEM
(MIDMS) ALONG WITH THE SYSTEM'S LOAD MODULES,
EXECUTABLE ON AN IBM 360/40G OR LARGER MACHINE,
UNDER A PCP, MVT OR MFT-II OPERATING SYSTEM
CONFIGURATION. IT REQUIRES A MINIMUM OF 128K
BYTES OF CORE WITH PCP, AND 256K BYTES WITH MVT
OR MFT-II OPERATING SYSTEMS, AND CAN USE ANY
INPUT/OUTPUT DEVICE SUPPORTED BY THE OPERATING
SYSTEM. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 415 9/2
CALIFORNIA UNIV LOS ANGELES CALIF DEPT OF COMPUTER
SCIENCE

MEMORY-USE ESTIMATOR FUNCTION OF A PROGRAM
EXECUTING IN PAGING ENVIRONMENT,

(U)

73 10P RAO, JAI R. ;
CONTRACT: AF-AFOSR-2384-72
PROJ: AF-9769
TASK: 976902
MONITOR: AFOSR TR-74-0010

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN THE PROCEEDINGS ON TEXAS
CONFERENCE ON COMPUTING SYSTEMS (2ND), P15-1--15-
7, 12-13 NOV 73.

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH THE
HOLMES AND NARVER, INC., ANAHEIM, CALIF.

DESCRIPTORS: *COMPUTER PROGRAMMING, *MEMORY DEVICES,
ALLOCATIONS, ESTIMATES

(U)

IDENTIFIERS: PAGING, PAGED ENVIRONMENTS

(U)

ATTEMPTS HAVE BEEN MADE THROUGH SIMULATION TO STUDY
PROGRAM EXECUTION IN A PAGING ENVIRONMENT. HEREIN,
THE AUTHOR DEVELOPS AN ANALYTIC MODEL, MEMORY-USE
ESTIMATOR FUNCTIONS $S(X, V)$, WHICH IS A FUNCTION
OF INSTRUCTIONS EXECUTED X AND PAGE SIZE V IN
WORDS; $S(X, V)$ ADEQUATELY DESCRIBES PAGE DEMAND OF
A PROGRAM IN EXECUTION. PROPERTIES OF THIS
FUNCTION ARE DISCUSSED AND COMPARED WITH SOME
PREVIOUS STUDIES. THE MEMORY-USE ESTIMATOR
FUNCTION CAN BE USED TO DETERMINE THE NUMBER OF PAGES
A PROGRAM WOULD USE DURING A GIVEN EXECUTION TIME
SLICE. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 485 9/2
NAVAL ORDNANCE LAB WHITE OAK MD

PROGRESS TOWARD THE CROSSTIE MEMORY,

(U)

OCT 73 60P SCHWEE, LEONARD J. ; IRONS,
HENRY R. ; KRALL, ALBERT D. ; ANDERSON, WALLACE
E. ; WATSON, J. KENNETH ;
REPT. NO. NOLTR-73-185
PROJ: MAT-03L-000/ZF61-512, NOL-824/RR011-02
TASK: MAT-03L-000/ZF61-512-001, NOL-824/RR011-02-
02

UNCLASSIFIED REPORT

DESCRIPTORS: *THIN FILM STORAGE DEVICES, *SHIFT
REGISTERS, *RANDOM ACCESS COMPUTER STORAGE, MAGNETIC
DOMAINS, DOMAIN WALLS, THIN FILMS, MAGNETIC
MATERIALS, MAGNETIC RESONANCE, ELECTRIC CURRENTS,
PERFORMANCE (ENGINEERING)

(U)

IDENTIFIERS: BORAM (BLOCK ORIENTED RANDOM
ACCESS MEMORIES), BLOCK ORIENTED RANDOM ACCESS
MEMORIES, *MAGNETIC FILM MEMORIES, MAGNETIC BUBBLE
DOMAINS, MAGNETORESISTIVITY

(U)

PROGRESS TOWARD A MAGNETIC SERIAL ACCESS MEMORY
WHICH STORES INFORMATION IN DOMAIN WALLS OF A
MAGNETIC THIN FILM IS REPORTED. CALLED THE
CROSSTIE MEMORY, IT REPRESENTS A RADICAL DEPARTURE
FROM PREVIOUS TECHNIQUES IN WHICH THE INFORMATION IS
STORED IN DOMAINS RATHER THAN WALLS. THE CROSSTIE
MEMORY IS INTENDED FOR USE AS A BLOCK ORIENTED RANDOM
ACCESS MEMORY (BORAM) OR FAST AUXILIARY MEMORY
(FAM). THE ADVANTAGES OF THE CROSSTIE APPROACH
ARE SPEED, LOW POWER, HIGH BIT DENSITY,
NONVOLATILITY, A WIDE TEMPERATURE OPERATING RANGE,
LOW COST, AND AVAILABLE TECHNOLOGY. THE REPORT
SUMMARIZES THE BACKGROUND KNOWLEDGE NECESSARY FOR THE
DESIGN OF SUCH A MEMORY. THIS INCLUDES EXPERIMENTS
ON STABILITY CONDITIONS, MOBILITY, DYNAMIC EFFECTS,
PROPAGATION, AND DETECTION. THE CROSSTIE METHOD
APPEARS COMPLETELY FEASIBLE AND SEVERAL OPTIONS ARE
POSSIBLE FOR ITS ULTIMATE EMBODIMENT.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 492 9/2
HARVARD UNIV CAMBRIDGE MASS

RESEARCH ANALYSIS OF OPERATING SYSTEMS. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 MAY 70-30 JUN 73,
OCT 73 121P BUZEN, J. P. ; GAGLIARDI, U.
O. ;

CONTRACT: F19628-70-C-0217
PROJ: AF-2801
TASK: 280102
MONITOR: ESD TR-73-274

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMMING,
MULTIPROGRAMMING, MATHEMATICAL MODELS, STOCHASTIC
PROCESSES, DATA STORAGE SYSTEMS, QUEUEING THEORY,
ALGORITHMS (U)

IDENTIFIERS: *OPERATING SYSTEMS (COMPUTERS),
VIRTUAL MEMORY, COMPUTER STORAGE MANAGEMENT,
HIST COMPUTER PROGRAM, PDP-10 COMPUTERS,
PERFORMANCE EVALUATION, COMPUTER PRIVACY (U)

SUMMARY REPORTS OF OPERATING SYSTEMS RESEARCH
PERFORMED BY CONTRACT PERSONNEL ARE PRESENTED.
RESEARCH OVERVIEWS, BRIEF SUMMARIES OF EXISTING
PAPERS, AND REPRINTS OF SEVERAL PREVIOUSLY PUBLISHED
ARTICLES ARE INCLUDED. THE RESEARCH IS DIVIDED
ROUGHLY INTO FOUR AREAS: SYSTEM PERFORMANCE
MODELS, PROGRAM ADDRESSING BEHAVIOR, VIRTUAL
MACHINES, AND DATA BASE PRIVACY AND SECURITY.
(MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 601 9/2
FEDERAL COBOL COMPILER TESTING SERVICE WASHINGTON D C

COBOL COMPILER VALIDATION SYSTEM, MAGNETIC
TAPE VERSION 6.0. (U)

OCT 73 1V
REPT. NO. FCCTS-01

UNCLASSIFIED REPORT

AVAILABILITY: FOREIGN SALES SUBJECT TO NEGOTIATION.
SPECIFY TAKE RECORDING MODE DESIRED: 7 TRACK, 556 AND
800 BPI, ODD AND EVEN PARITY; OR 9 TRACK, 800 BPI, ODD
PARITY.

SUPPLEMENTARY NOTE: PRICE INCLUDES USERS GUIDE, AD-772 600.

DESCRIPTORS: *PROGRAMMING LANGUAGES, *COMPILERS,
*VALIDATION, *MAGNETIC TAPE (U)
IDENTIFIERS: *COBOL (U)

THE COBOL VALIDATION SYSTEM IS USED TO VALIDATE COBOL COMPILERS AND TO ENSURE THEIR CONFORMANCE TO THE FEDERAL STANDARD AS PRESCRIBED IN FIPS-PUB-21. THE SYSTEM CONSISTS OF A COMPREHENSIVE SET OF AUDIT ROUTINES, THEIR RELATED DATA, AND AN EXECUTIVE ROUTINE WHICH PREPARES THE AUDIT ROUTINES FOR COMPILATION IN A PARTICULAR HARDWARE/OPERATING SYSTEM ENVIRONMENT. EACH AUDIT ROUTINE IS A COBOL PROGRAM WHICH INCLUDES SEVERAL TESTS AND SUPPORTING PROCEDURES INDICATING THE RESULT OF THE TESTS. THE PAPER CONTAINS THE MAGNETIC TAPE FOR THE COBOL VALIDATION SYSTEM. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 630 9/2
BROWN UNIV PROVIDENCE R I DIV OF APPLIED MATHEMATICS

THE OPTIMAL CHOICE OF WINDOW SIZES FOR
WORKING SET DISPATCHING, (U)

MAY 73 34P HENDERSON, GREG ; RODRIGUEZ-
ROSELL, JUAN ;
CONTRACT: N00014-67-A-0191-0026

UNCLASSIFIED REPORT

DESCRIPTORS: *CONTROL SEQUENCES, *COMPILERS, DATA
PROCESSING, MEMORY DEVICES, COMPUTATIONS, TIME
SHARING (U)
IDENTIFIERS: FAULT TOLERANT COMPUTING (U)

THE CONCEPT OF VARYING WINDOW SIZE IN A WORKING SET
DISPATCHER TO CONTROL WORKING SET SIZE AND NUMBER OF
PAGE FAULTS IS EXAMINED. A SPACE-TIME COST EQUATION
IS DEVELOPED AND USED TO COMPARE DIFFERENT
DISPATCHING ALGORITHMS AND DIFFERENT TYPES OF
SECONDARY STORAGE BASED ON THE SIMULATED EXECUTION OF
REAL PROGRAMS. A GENERAL APPROACH IS INDICATED FOR
STUDYING THE RELATIVE MERIT OF DIFFERENT DISPATCHING
ALGORITHMS AND THEIR INTERACTION WITH DIFFERENT
HARDWARE CONFIGURATIONS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 772 808 9/2
MITRE CORP BEDFORD MASS

DESIGN OF A SECURITY KERNEL FOR THE PDP-11/
45.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 73 79P SCHILLER, W. L. ;
REPT. NO. MTR-2709
CONTRACT: F19628-73-C-0001
PROJ: AF-5228
MONITOR: ESD TR-73-294

UNCLASSIFIED REPORT

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *SECURITY,
*COMPUTER PROGRAMMING, MEMORY DEVICES, INPUT
OUTPUT DEVICES

(U)

IDENTIFIERS: PDP-11/45 COMPUTERS, COMPUTER
SECURITY, DESIGN

(U)

THE PAPER PRESENTS THE DESIGN OF A KERNEL FOR
SECURE COMPUTER SYSTEMS TO BE BUILT ON THE DIGITAL
EQUIPMENT CORPORATION PDP-11/45. THE DESIGN
APPLIES A GENERAL PURPOSE MATHEMATICAL MODEL OF
SECURE COMPUTER SYSTEMS TO AN OFF-THE-SHELF COMPUTER.
THE KERNEL DESIGN IS INTENDED TO SUPPORT SYSTEMS OF
LIMITED GENERALITY, RATHER THAN A GENERAL PURPOSE
SYSTEM. THE INITIAL SYSTEMS TO BE BUILT ON THE 11/
45 WILL BE A FRONT-END (COMMUNICATIONS) PROCESSOR
FOR A SECURE CENTRAL COMPUTER AND A QUERY SYSTEM FOR
A SECURE MULTILEVEL DATA BASE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 773 233 5/9 9/2
ASSISTANT SECRETARY OF DEFENSE (MANPOWER AND RESERVE
AFFAIRS) WASHINGTON D C

COMPREHENSIVE OCCUPATIONAL DATA ANALYSIS
PROGRAM (CODAP), (U)

74 IV CANTER, RALPH ; MILLER, J. P.

; REPT. NO. OSAD/MRA-CODAP-73

UNCLASSIFIED REPORT

AVAILABILITY: AVAILABLE FROM NTIS \$200.00.
SPECIFY TAPE RECORDING MODE DESIRED: 9 TRACK, 800
BPI, ODD PARITY ONLY. COMPUTER PRODUCTS CATALOG DATA
SHEET, ANALYSTS GUIDE, USERS GUIDE, SYSTEMS MAINTENANCE
GUIDE, EXECUTIVES OVERVIEW GUIDE, AND CODAP CARD DECK
INCLUDED. NO COPIES FROM DDC.

DESCRIPTORS: *MAGNETIC TAPE, *JOB ANALYSIS, DATA
PROCESSING, INPUT, STATISTICAL ANALYSIS (U)
IDENTIFIERS: CODAP COMPUTER PROGRAM (U)

CODAP IS A SERIES OF COMPUTER PROGRAMS FOR
OCCUPATIONAL ANALYSIS WHICH: PERMIT THE
TRANSFORMATION OF JOB DATA INTO MACHINE INPUT FORM;
ALLOW CERTAIN MATHEMATICAL AND SUMMARY PROCESSES TO
OCCUR; AND PRESENT REPORTS RELATIVE TO JOB
ORGANIZATION AND STATISTICAL INFORMATION RELATED TO
DEFINED JOB AREAS. THE EXPORT VERSION OF CODAP
IS CONTAINED ON ONE REEL OF MAGNETIC TAPE. IT
PRODUCES A SINGLE SHEET OF INSTALLATION INSTRUCTIONS
AND A PUNCHED DECK CONTAINING THESE INSTRUCTIONS.
THE TAPE CONTAINS DETAILED INSTRUCTIONS AND USER
JOB STREAM FOR INSTALLATION, PLUS CERTAIN MODULES,
CODAP EXECUTION PROCEDURES, AND SELECTED UTILITY
PROCEDURES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 773 963 9/2
EVANS AND SUTHERLAND COMPUTER CORP SALT LAKE CITY UTAH

A CHARACTERIZATION OF TEN HIDDEN-SURFACE
ALGORITHMS. (U)

DESCRIPTIVE NOTE: REPT. FOR APR 72-MAR 73,
DEC 73 118P SUTHERLAND, IVAN E. ; SPROULL,
ROBERT F. ; SCHUMACKER, ROBERT A. ;
CONTRACT: N00014-72-C-0346
PROJ: NR-049-333

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER GRAPHICS, MEMORY DEVICES,
COMPUTATIONS, SORTING, COMPUTER PROGRAMMING,
ALGORITHMS (U)
IDENTIFIERS: IMAGE PROCESSING, CONVEX
POLYGONS (U)

THE PAPER ASSERTS THAT THE HIDDEN-SURFACE PROBLEM
IS MAINLY ONE OF SORTING. THE VARIOUS SURFACES OF
AN OBJECT TO BE SHOWN IN HIDDEN-SURFACE OR HIDDEN-
LINE FORM MUST BE SORTED TO FIND OUT WHICH ONES ARE
VISIBLE AT VARIOUS PLACES ON THE SCREEN. SURFACES
MAY BE SORTED BY LATERAL POSITION IN THE PICTURE
(XY), BY DEPTH (Z), OR BY OTHER CRITERIA. THE
PAPER SHOWS THAT THE ORDER OF SORTING AND THE TYPES
OF SORTING USED FORM DIFFERENCES AMONG THE EXISTING
HIDDEN-SURFACE ALGORITHMS. (MODIFIED AUTHOR
ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 776 028 9/2
RAND CORP SANTA MONICA CALIF

A COMPUTER CENTRALIZATION COST MODEL FOR
CONCEPTUAL DESIGN,

(U)

SEP 73 59P SEALS, EUGENE ; DREZNER,
STEPHEN M. ;
REPT. NO. R-1268-PR
CONTRACT: F44620-73-C-0011

UNCLASSIFIED REPORT

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *JOB
ANALYSIS, *COST ANALYSIS, SYSTEMS ANALYSIS, AIR
FORCE, COMMUNICATION EQUIPMENT, INPUT OUTPUT
DEVICES, MEMORY DEVICES, COMPUTER PROGRAMMING,
MAINTENANCE, MANPOWER

(U)

THE REPORT DESCRIBES A COMPUTER MODEL DEVELOPED TO
HELP INVESTIGATE THE COSTS OF CENTRALIZING U.S.
AIR FORCE BASE-MODEL COMPUTATION WORKLOAD. THE
MODEL PERMITS THE ANALYST TO ESTIMATE THE COST OF
CONSOLIDATING MULTIPLE EXISTING OR PROPOSED
FACILITIES INTO FEWER FACILITIES. THE REPORT
DESCRIBES THE MODEL, THE ASSUMPTIONS IMPLICIT IN ITS
WORLD VIEW, AND THE INPUTS REQUIRED BY THE ANALYST.
THE LIMITATIONS OF THE MODEL AND POSSIBLE FUTURE
MODIFICATIONS ARE ALSO DISCUSSED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 777 100 9/2 5/1
ARMY AUDIT AGENCY WASHINGTON D C

AUDIT: ARMY UNIFORM DATA INQUIRY TECHNIQUE
- COMPUTER PROGRAMS,

(U)

MAR 74 IV ROLIG, THEODORE C. ;

UNCLASSIFIED REPORT

AVAILABILITY: SPECIFY TAPE RECORDING MODE DESIRED:
7 TRACK, 556 AND 800 BPI, ODD AND EVEN PARITY; OR 9
TRACK, 800 BPI, ODD PARITY. ALSO AVAILABLE IN PUNCHED
CARDS.

SUPPLEMENTARY NOTE: FOR USER'S MANUAL, SEE AD-777
101. FOR TECHNICAL MANUAL, SEE AD-777 102.

DESCRIPTORS: *COMPUTER PROGRAMS, *MAGNETIC TAPE,
*MANAGEMENT INFORMATION SYSTEMS, *AUDITING, ARMY
OPERATIONS, COMPILERS, BOOLEAN ALGEBRA
IDENTIFIERS: *AUDIT SYSTEM, COBOL

(U)

(U)

AUDIT IS A MANAGEMENT RETRIEVAL AND ANALYZER SYSTEM
WHICH FEATURES AN EASY-TO-USE HUMAN-ENGINEERED
SPECIFICATION LANGUAGE AND COBOL IMPLEMENTING
SOFTWARE. THE REPORT CONTAINS THE MAGNETIC TAPE
FOR THE SYSTEMS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 778 765 9/2 9/5
NORTH CAROLINA STATE UNIV RALEIGH DEPT OF ELECTRICAL
ENGINEERING

RESEARCH PROPOSAL FOR MINIMAL COST
SEQUENTIAL MACHINES,

(U)

JAN 74 69P STAUDHAMMER, JOHN ;
REPT. NO. REPT. NO. 1
CONTRACT: DA-ARO-D-31-124-72-G65

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPRINTED WITH CORRECTIONS REPORT
DATED JAN 73.

DESCRIPTORS: *GATES(CIRCUITS), *LOGIC CIRCUITS,
MEMORY DEVICES, COMPUTATIONS, ALGORITHMS,
COSTS

(U)

IDENTIFIERS: *ASYNCHRONOUS SEQUENTIAL CIRCUITS,
FLIP FLOPS, *SEQUENTIAL MACHINES, LOGIC DESIGN

(U)

THE STATE ASSIGNMENT PROBLEM FOR MINIMAL LOGIC
REQUIRED FOR A GENERAL SYNCHRONOUS MACHINE IS
CONCEDED TO BE A COMPUTATIONALLY INTRACTABLE PROBLEM.
HOWEVER RESEARCH CONDUCTED HERE OVER THE LAST 18
MONTHS INDICATES THAT A REALISTIC LOWER LIMIT MAY BE
FOUND ON THE LOGIC REQUIRED AND THAT THE PROCEDURES
USED TO CALCULATE THIS LIMIT MAY BE TAKEN AS A BASIS
FOR GUIDING THE STATE ASSIGNMENT SUCH THAT A CIRCUIT
APPROACHING THIS LIMIT MAY BE OBTAINED.
FURTHERMORE, THE PROCEDURE MAY BE USED TO DECIDE ON
THE KIND OF MEMORY ELEMENT TO BE USED. IT IS
PROPOSED TO EXTEND THESE PRELIMINARY RESULTS TO
ASYNCHRONOUS MACHINES, TO INCOMPLETELY SPECIFIED
MACHINES, AND TO INCLUDE OUTPUT CONSIDERATIONS.
FURTHER IT IS PROPOSED TO CONSOLIDATE THESE
FINDINGS IN A SET OF ALGORITHMS WHICH GIVE AN
ACCEPTABLY GOOD STATE ASSIGNMENT FOR ARBITRARY,
NONTRIVIAL MACHINES. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 779 158 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

APPLICATION OF A HIGH-SPEED ASSOCIATIVE
MEMORY UNIT IN THE STORAGE SYSTEM OF THE
'URAL-11' DIGITAL COMPUTER,

(U)

APR 74 12P MORONOV, A. M. ; MINEEV, G.
YU. ; KOZINETS, YU. I. ;
REPT. NO. FTD-HT-23-562-74
PROJ: FTD-T74-05-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF NAUCHNO-
ISSLEDOVATELSKII INSTITUT UPRAVLYAYUSHCHIKH MASHIN I
SISTEM, INFORMATSIONNO-POISKOVYE SISTEMY. TRUDY
(USSR) N4 P49-54 1970, BY RENE E. COURVILLE.

DESCRIPTORS: *DIGITAL COMPUTERS, *MEMORY DEVICES,
TRANSLATIONS, USSR

(U)

IDENTIFIERS: URAL-11 COMPUTERS, *ASSOCIATIVE
STORAGE

(U)

APPLICATION OF A HIGH-SPEED ASSOCIATIVE MEMORY
UNIT IN THE STORAGE SYSTEM OF THE 'URAL-11'
DIGITAL COMPUTER--TRANSLATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 779 452 9/2

HAWAII UNIV HONOLULU DEPT OF INFORMATION AND COMPUTER
SCIENCE

AN INVESTIGATION OF COMPUTER SYSTEMS
PROBLEMS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

MAR 74 19P PETERSON, W. W. ; LEW, A. ;

CONTRACT: DA-ARO-D-31-124-71-G43

PROJ: AROD-P-8803-RT

MONITOR: AROD 8803.17-RT

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMMING, *COMPILERS,
*MEMORY DEVICES, SCHEDULING, SEMANTICS

(U)

IDENTIFIERS: PAGING, PARSING, COMPUTER STORAGE
MANAGEMENT, DEBUGGING (COMPUTERS)

(U)

THE MAIN PROBLEM AREAS SUMMARIZED HERE ARE
MULTIPROGRAMMING AND PAGING SYSTEMS, DIAGNOSTIC
COMPILERS AND DEBUGGING, AND GOTO-LESS PROGRAMMING.
IN THE AREA OF MULTIPROGRAMMING AND PAGING, THE
AUTHORS HAVE STUDIED THE PROBLEMS OF OPTIMAL
PAGINATION, REPLACEMENT, ALLOTMENT, AND SCHEDULING.
IN THE AREA OF DIAGNOSTIC COMPILERS AND DEBUGGING,
METHODS FOR INCREASING USE OF CONTEXTUAL INFORMATION
IN BOTH PARSING AND RUN-TIME ENVIRONMENTS ARE
STUDIED. POSSIBLE USES OF INEFFICIENCIES AS CLUES
AND LANGUAGE DESIGN CONSIDERATIONS WERE ALSO
INVESTIGATED. IN THE AREA OF GOTO-LESS
PROGRAMMING, ALTERNATIVES TO GOTO STATEMENTS, THEIR
CAPABILITIES AND THE CONSTRUCTION OF WELL-FORMED
PROGRAMS ARE STUDIED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 779 884 9/2
CALIFORNIA UNIV LOS ANGELES SCHOOL OF ENGINEERING AND
APPLIED SCIENCE

MEASUREMENT AND MODELING OF PROGRAM BEHAVIOR
AND ITS APPLICATIONS,

(U)

APR 74 286P OPDERBECK, HOLGER ;
REPT. NO. UCLA-ENG-7418
CONTRACT: N00014-69-A-0200-4027
PROJ: NR-048-129

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, *ALLOCATIONS,
*COMPUTER PROGRAMMING, COMPILERS, REPLACEMENT,
FAULTS, STOCHASTIC PROCESSES, ALGORITHMS, THESES
IDENTIFIERS: *PAGING, VIRTUAL MEMORY, PAGE FAULT
FREQUENCY, MARKOV PROCESSES, MULTIPROGRAMMING

(U)

(U)

THE EMPHASIS OF THE RESEARCH IS ON THE MEASUREMENT
AND MODELING OF PROGRAM BEHAVIOR IN A PAGED MEMORY
SYSTEM. MEASUREMENT RESULTS ARE USED AS A
FOUNDATION FOR THE STUDY OF PROGRAM BEHAVIOR.
BASED ON THESE RESULTS, MODELS OF PROGRAM BEHAVIOR
ARE DEVELOPED. THESE MODELS ARE THEN USED TO STUDY
THE PERFORMANCE OF REPLACEMENT ALGORITHMS. A NEW
TYPE OF REPLACEMENT ALGORITHM BASED ON THE MEASURED
PAGE FAULT FREQUENCY (PFF) IS DEFINED AND
INVESTIGATED. NEXT, TWO NEW PROGRAM MODELS, THE
GENERALIZED LRU STACK MODEL (GLRUM) AND THE
RENEWAL MODEL, ARE INTRODUCED. FINALLY, THE GLRUM
IS USED FOR THE PERFORMANCE EVALUATION OF
MULTIPROGRAMMING SYSTEMS. SEVERAL ACTIVATION AND
DEACTIVATION POLICIES ARE DEFINED FOR THE PFF
ALGORITHM AND INVESTIGATED VIA A SIMULATION STUDY.
IT IS SHOWN THAT THE PFF REPLACEMENT ALGORITHM
GIVES - OVER A WIDE RANGE OF MEMORY SIZES - A BETTER
PERFORMANCE THAN THE LRU REPLACEMENT ALGORITHM FOR
ANY DEGREE OF MULTIPROGRAMMING. (MODIFIED AUTHOR
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 780 129 9/2 17/2
MASSACHUSETTS INST OF TECH CAMBRIDGE

MULTICOMMODITY THROUGHPUT IN DIGITAL DATA
NETWORKS WITH FINITE STORAGE,

(U)

NOV 72 8P FIELDS, JOHN S. ;
CONTRACT: DAAB07-71-C-0300

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN IEEE TRANSACTIONS ON
COMMUNICATIONS, P836-842 JUL 73.

SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 5 JUN
72.

DESCRIPTORS: *DATA PROCESSING, *MEMORY DEVICES,
*NETWORK FLOWS, SWITCHING CIRCUITS, QUEUEING
THEORY, SHIFT REGISTERS, THEOREMS
IDENTIFIERS: *COMPUTER NETWORKS

(U)

(U)

A MODEL OF A DIGITAL DATA MESSAGE SWITCHING NETWORK
IS DESCRIBED. THE NETWORK PERMITS ONLY FINITE
STORAGE AT NODES. DISCUSSED IS A ROUTING STRATEGY
AND STORAGE ALLOCATION TO MAXIMIZE THROUGHPUT BETWEEN
MANY SOURCE-RECEIVER PAIRS SIMULTANEOUSLY.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 780 312 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

ON THE APPLICATION OF MATRIX PRINCIPLES
WHEN DESIGNING DIGITAL COMPUTERS (TSVM)
UTILIZING MULTIVALUE ELEMENTS. (U)

MAY 74 10P IVASKIV, YU. L. IBYCHENOK,
N. N. ;
REPT. NO. FTD-HT-23-1022-74
PROJ: FTD-T74-05-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO.
MNOGOSTOICHIVYE ELEMENTY I IKH PRIMENENIE. SBORNIK
STATEI, N.P., 1971 P284-289, BY CATHERINE M.
BARBER.

DESCRIPTORS: *DIGITAL COMPUTERS, *MEMORY DEVICES,
MATRICES(MATHEMATICS), TRANSLATIONS, USSR (U)
IDENTIFIERS: ARITHMETIC AND LOGIC UNITS,
DESIGN (U)

ON THE APPLICATION OF MATRIX PRINCIPLES WHEN
DESIGNING DIGITAL COMPUTERS (TSVM) UTILIZING
MULTIVALUE ELEMENTS--TRANSLATION.

AD-A031 200

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA
COMPUTERS IN INFORMATION SCIENCES: COMPUTER COMPONENTS.(U)
OCT 76

F/G 9/2

UNCLASSIFIED

DDC/BIB-76/09

NL

2 OF 4
AD
A031 200



UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 780 357 13/2 8/9 9/2
GENERAL RESEARCH CORP ARLINGTON VA

COMPUTER SIMULATION OF HARD ROCK TUNNELING
PROGRAM: PROGRAM TAPE.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. OCT 70-APR 72,
MAY 73 1V HIBBARD, R. R. ; PIETRZAK, L.

M. ;

REPT. NO. GRC-CR-2-190-TAPE
CONTRACT: H0110238

UNCLASSIFIED REPORT

AVAILABILITY: SPECIFY TAPE RECORDING MODE DESIRED:
7 TRACK, 556 AND 800 BPI, ODD AND EVEN PARITY, BCD; OR
9 TRACK, 800 BPI, ODD PARITY, EBCDIC. AVAILABLE TO
NON-U.S. ADDRESSES \$375.00. PRICE INCLUDES
DOCUMENTATION - AD-763 563 THRU AD-763 565 AND AD-763
567.

DESCRIPTORS: *CONSTRUCTION, *UNDERGROUND STRUCTURES,
*COMPUTERIZED SIMULATION, *MAGNETIC TAPE,
TUNNELING, GEOLOGICAL SURVEY, ROCK MECHANICS,
FRAGMENTATION, EARTH HANDLING EQUIPMENT, COSTS,
FORTRAN

(U)

IDENTIFIERS: FORTRAN 4 PROGRAMMING LANGUAGE, *HARD
ROCK TUNNELING, MATERIAL CONTROL, BENEFIT COST
ANALYSIS

(U)

THIS IS THE MAGNETIC TAPE CONTAINING COMPUTER
PROGRAMS LISTED IN VOLUME 2 OF THE FINAL TECHNICAL
REPORT GENERATED UNDER CONTRACT H0110238. A
COMPUTER MODEL OF THE OVERALL HARD ROCK TUNNELING
PROCESS WHICH CONSIDERS BOTH PERFORMANCE AND COSTS OF
THE OPERATION WAS DEVELOPED. SEGMENTS OF THE
TUNNELING PROCESS MODELED INCLUDE GEOLOGY,
FRAGMENTATION METHODS, MUCK REMOVAL, GROUND SUPPORT,
AND ENVIRONMENTAL CONSIDERATIONS. A THREE-
DIMENSIONAL STRATIFIED GEOLOGY MODEL, FUNCTIONS AS A
DATA FILE TO REPRESENT GEOLOGICAL CONDITIONS IN THE
AREA SURROUNDING THE TUNNEL. THE USER HAS A CHOICE
OF SIMULATING ROCK FRAGMENTATION BY DRILL AND BLAST,
BORING MACHINE, HIGH VELOCITY WATER JET, AND
PROJECTILE IMPACT. HE MAY ALSO SIMULATE EITHER
RAIL, TRUCK, OR CONVEYOR BELT HAULAGE SYSTEMS.
STEEL SETS, SHOTCRETE, AND ROCK BOLTS ARE OFFERED
AS A CHOICE OF GROUND SUPPORT METHODS.
ENVIRONMENTAL FACTORS CONSIDERED INCLUDE WATER
REMOVAL, VENTILATION, AND COOLING. A COST
ACCOUNTING SYSTEM IS INCORPORATED TO PROVIDE COST-
BENEFIT ANALYSIS OF TUNNELING SYSTEM PERFORMANCE.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 780 407 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE PROJECT MAC

AN EXPERIMENTAL ANALYSIS OF PROGRAM
REFERENCE PATTERNS IN THE MULTICS VIRTUAL
MEMORY.

(U)

DESCRIPTIVE NOTE: INTERIM SCIENTIFIC REPT.,
MAY 74 142P GREENBERG, BERNARD S. ;
REPT. NO. MAC-TR-127
CONTRACT: N00014-70-A-0362-0006

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, RATES, COMPUTER
PROGRAMMING, REAL TIME, FAULTS, QUEUEING THEORY,
SCHEDULING, ALGORITHMS, THESES

(U)

IDENTIFIERS: *PAGING, VIRTUAL MEMORY, MULTICS
SYSTEM, COMPUTER STORAGE MANAGEMENT, MAC
PROJECT

(U)

THE REPORT DISCUSSES THE DESIGN, CONDUCTING, AND
RESULTS OF AN EXPERIMENT INTENDED TO MEASURE THE
PAGING RATE OF A VIRTUAL MEMORY COMPUTER SYSTEM AS A
FUNCTION OF PAGING MEMORY SIZE. THIS EXPERIMENT,
CONDUCTED ON THE MULTICS COMPUTER SYSTEM AT
M.I.T., A LARGE INTERACTIVE COMPUTER UTILITY
SERVING AN ACADEMIC COMMUNITY, SOUGHT TO PREDICT
PAGING RATES FOR PAGING MEMORY SIZES LARGER THAN THE
EXISTENT MEMORY AT THE TIME. A TRACE OF ALL
SECONDARY MEMORY REFERENCES FOR TWO DAYS WAS
ACCUMULATED, AND SIMULATION TECHNIQUES APPLICABLE TO
'STACK' TYPE PAGING ALGORITHMS (OF WHICH THE LEAST-
RECENTLY-USED DISCIPLINE USED BY MULTICS IS ONE)
WERE APPLIED TO IT. A TECHNIQUE FOR INTERFACING
SUCH AN EXPERIMENT TO AN OPERATIVE COMPUTER UTILITY
IN SUCH A WAY THAT ADEQUATE DATA CAN BE GATHERED
RELIABLY AND WITHOUT DEGRADING SYSTEM PERFORMANCE IS
DESCRIBED. (MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 780 732 9/2
BALLISTIC RESEARCH LABS ABERDEEN PROVING GROUND MD

DYNAMIC STORAGE ALLOCATION FOR THE BRLESC II
COMPUTER.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
MAY 74 29P HIRSCHBERG, MORTON A. ;
REPT. NO. BRL-1718

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMMING, MEMORY DEVICES,
ALLOCATIONS, SUBROUTINES, FORTRAN (U)

IDENTIFIERS: *BRLESC 2 COMPUTER, *COMPUTER STORAGE
MANAGEMENT, SIMSCRIPT PROGRAMMING LANGUAGE (U)

THE USE OF DYNAMIC STORAGE ALLOCATION FOR THE
BRLESC II COMPUTER IS DESCRIBED, AS WELL AS THE USE
OF LINKED LISTS. THIS SYSTEM WAS FASHIONED AFTER
THE DYNAMIC STORAGE SCHEME USED IN SIMSCRIPT.
SOME OF THE SIMSCRIPT NAMES BEING QUITE
DESCRIPTIVE HAVE BEEN USED HERE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 781 182 9/2
MITRE CORP BEDFORD MASS

DESIGN OF A SECURE COMMUNICATIONS
PROCESSOR: CENTRAL PROCESSOR,

(U)

JUN 74 98P TASKER, P. S. ;
REPT. NO. MTR-2439-VOL-3
CONTRACT: F19628-73-C-0001
PROJ: AF-7210
MONITOR: ESD TR-74-181

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *DATA PROCESSING SECURITY, *CENTRAL
PROCESSING UNITS, *COMMUNICATIONS NETWORKS, MEMORY
DEVICES, SWITCHING CIRCUITS, COMPUTER PROGRAMMING,
NETWORK FLOWS

(U)

IDENTIFIERS: COMPUTER NETWORKS, IC I-50
COMMUNICATIONS PROCESSORS, ROUTING, COMPUTER
INFORMATION SECURITY

(U)

THE SECURE COMMUNICATIONS PROCESSOR IS
INTENDED AS A FEASIBILITY MODEL FOR USE IN TESTING
AND VERIFYING WORK CONCERNED WITH THE DESIGN AND
CERTIFICATION OF SECURE ACCESS CONTROLS FOR COMPUTER
SYSTEMS. THE SYSTEM WAS CONCEIVED TO BE HARDWARE
INDEPENDENT, BUT IS IMPLEMENTED ON AN INTERCOMPUTER
COMMUNICATIONS CORPORATION I-50 COMMUNICATIONS
PROCESSOR. THE REPORT, THE THIRD CONTAINING THE
DESIGN DETAILS, DISCUSSES THE CENTRAL PROCESSOR
(PC), HALF OF THE DUAL PROCESSOR MESSAGE SWITCH.
THIS VOLUME CONTAINS IMPLEMENTATION DETAILS OF THE
ACCESS CONTROL AND SPECIAL INSTRUCTIONS FOR THE
FIRMWARE AND SOFTWARE REQUIRING CERTIFICATION AS WELL
AS OPERATING CONCEPTS AND A 'USERS' MANUAL' FOR
CONSTRUCTING THE UNCERTIFIED ROUTINES FOR PC.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 783 323 9/2
RAND CORP SANTA MONICA CALIF

COMPUTERS IN THE 1980S -- TRENDS IN HARDWARE
TECHNOLOGY,

(U)

MAR 74 20P TURN, REIN ;
REPT. NO. P-5189

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTERS, *FORECASTING, LOGIC
CIRCUITS, SWITCHING CIRCUITS, PARALLEL PROCESSORS,
MEMORY DEVICES, SOLID STATE ELECTRONICS, METAL
OXIDE SEMICONDUCTORS, BIPOLAR TRANSISTORS, COMMAND
AND CONTROL SYSTEMS

(U)

IDENTIFIERS: *COMPUTER SYSTEMS HARDWARE, ARRAY
PROCESSORS, SEMICONDUCTOR COMPUTER STORAGE

(U)

THE PAPER PRESENTS A TECHNOLOGICAL FORECAST OF
COMPUTER HARDWARE TRENDS IN THE 1975 TO 1990 TIME
PERIOD. PROJECTED ARE THE IMPROVEMENTS IN
SWITCHING SPEED, POWER CONSUMPTION, COST AND PHYSICAL
SIZE OF BIPOLAR AND METAL-OXIDE SEMICONDUCTOR LOGIC
CIRCUITS. BASED ON THESE, THE COMPUTING SPEED OF
PROCESSORS FOR SEVERAL COMPUTER ARCHITECTURES ARE
FORECAST -- UNIPROCESSORS, PIPELINE PROCESSORS, ARRAY
PROCESSORS, ASSOCIATIVE ARRAY PROCESSORS, AND FOR
COMMAND-CONTROL, MULTIPROCESSORS. THE STORAGE
CAPACITY AND ACCESS MEMORIES, AND SUMMARIZED FOR
OTHER SOLID-STATE MEMORY COMPONENT TECHNOLOGIES.
THE PAPER CONCLUDES WITH A DISCUSSION OF
INNOVATIONS IN COMPUTER SYSTEM DESIGN AND USE WHICH
BECOME FEASIBLE DUE TO THE EXPECTED HARDWARE
DEVELOPMENTS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 783 871 9/2
WASHINGTON UNIV ST LOUIS MO COMPUTER SYSTEMS LAB

MACROMODULAR COMPUTER DESIGN. PART 1.
DEVELOPMENT OF MACROMODULES. VOLUME 1.
OVERVIEW OF MACROMODULES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 APR 65-1 DEC 73,
FEB 74 144P COAKER,CHRISTINE D. ;
REPT. NO. TR-44
CONTRACT: SD-302

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY NATIONAL
INSTITUTES OF HEALTH, BETHESDA, MD. SEE ALSO AD-
783 872.

DESCRIPTORS: *CENTRAL PROCESSING UNITS,
*MODULES(ELECTRONICS), *LOGIC DEVICES, MEMORY
DEVICES, SHIFT REGISTERS, INPUT OUTPUT DEVICES,
DATA PROCESSING TERMINALS
IDENTIFIERS: *LOGIC DESIGN, ARITHMETIC AND LOGIC
UNITS, *MACROMODULES

(U)

(U)

THIS SET OF DOCUMENTS REPRESENTS AN ATTEMPT TO
BRING TOGETHER IN ONE PLACE SUFFICIENT MATERIAL TO
ENABLE THE READER TO OBTAIN A REASONABLE OVERVIEW OF
THE MAJOR IDEAS AND CONCEPTIONS THAT GAVE RISE TO THE
MACROMODULE DEVELOPMENT PROJECT AT WASHINGTON
UNIVERSITY, AND TO REPORT AND RECORD SOME OF THE
DETAILS OF THE ENSUING DEVELOPMENT EFFORT AND ITS
RESULTS. PART 1 OF THE REPORT DEALS WITH THE
DEVELOPMENT OF PHASE I MACROMODULES, OF WHICH
OVER 800 MODULES OF 17 TYPES HAVE BEEN CONSTRUCTED
AND MADE PART OF A WORKING INVENTORY THAT RESIDES AT
WASHINGTON UNIVERSITY. THE VOLUME CONTAINS TWO
EXCERPTED REPRINTS THAT PRESENT THE INITIAL
CONCEPTION OF MACROMODULES AND MEANS FOR IMPLEMENTING
THEM AS SEEN IN THE EARLY DAYS OF THE PROJECT, AND A
THIRD REPRINTED REPORT THAT PRESENTS A SUMMARY AND
OVERVIEW AS OF THE AUTUMN OF 1972.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 783 872 9/2
WASHINGTON UNIV ST LOUIS MO COMPUTER SYSTEMS LAB

MACROMODULAR COMPUTER DESIGN. PART 1.
DEVELOPMENT OF MACROMODULES. VOLUME II. A
MACROMODULE USER'S MANUAL.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
FEB 74 133P DICKSON, CHRISTINE E. ;
REPT. NO. TR-45
CONTRACT: SD-302

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY NATIONAL
INSTITUTES OF HEALTH, BETHESDA, MD. ALSO PUBLISHED
AS REPT. NO. TR-25. SEE ALSO AD-783 873 AND AD-873
871.

DESCRIPTORS: *CENTRAL PROCESSING UNITS,
*MODULES(ELECTRONICS), *LOGIC DEVICES, MEMORY
DEVICES, SHIFT REGISTERS, INPUT OUTPUT DEVICES,
DATA PROCESSING TERMINALS, COMPUTER PROGRAMMING
IDENTIFIERS: *LOGIC DESIGN, *MACROMODULES,
ARITHMETIC AND LOGIC UNITS

(U)

(U)

THE DOCUMENT SERVES AS A COMPREHENSIVE USER'S
MANUAL FOR MACROMODULES. IT SUPPLIES INFORMATION
ON MODULE CAPABILITIES AND OTHER FACTS NEEDED IN
SYSTEM DESIGN, AND ALSO GIVES THE PHYSICAL DETAILS
NECESSARY TO THE USER IN CONSTRUCTING AND OPERATING
HIS SYSTEM. EXPLANATIONS ARE AT THE LEVEL OF AN
'ELECTRONICALLY NAIVE' USER, BUT SOME KNOWLEDGE OF
MACHINE-LANGUAGE PROGRAMMING IS ASSUMED.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 783 997 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

STANDARDIZATION OF THE SWITCHING CURRENT OF
METALLIC-TAPE CORES FOR MULTI-STABLE
FERROMAGNETIC ELEMENTS,

(U)

JUL 74 10P KRAVCHENKO, V. B. ; LIPMAN,
R. A. ; POPOV, V. V. ;
REPT. NO. FTD-HT-23-1013-74
PROJ: FTD-T74-05-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MNOGOUSTOICHIVYE
ELEMENTY I IKH PRIMENENIE. SBORNIK STATEI
(USSR) P134-139 1971, BY FRANK C. VAUGHN.

DESCRIPTORS: *MAGNETIC CORES, CORE STORAGE,
MAGNETIC TAPE, SWITCHING, ELECTRIC CURRENT,
STANDARDIZATION, STEADY STATE, MEASUREMENT,
TRANSLATIONS, USSR

(U)

STANDARDIZATION OF THE SWITCHING CURRENT OF
METALLIC-TAPE CORES FOR MULTI-STABLE
FERROMAGNETIC ELEMENTS--TRANSLATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 784 372 9/2 22/2
JOHNS HOPKINS UNIV SILVER SPRING MD APPLIED PHYSICS
LAB

TRIAD COMPUTER.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
AUG 73 175P PERSCHY, J. A. ; ELDER, B.
M. ;
REPT. NO. APL-TG-1212
CONTRACT: N00017-72-C-4401
MONITOR: GIDEP 347.00.00.00-56-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *SPACECRAFT COMPONENTS, *DIGITAL
COMPUTERS, SATELLITES(ARTIFICIAL), DATA
PROCESSING EQUIPMENT, MEMORY DEVICES, INTEGRATED
CIRCUITS, LOGIC DEVICES, INTERFACES (U)
IDENTIFIERS: *TRIAD COMPUTER, TRIAD SATELLITE,
ARITHMETIC AND LOGIC UNITS (U)

THE TRIAD COMPUTER IS A THIRD-GENERATION, GENERAL
PURPOSE, GROUND PROGRAMMABLE DIGITAL COMPUTER USED IN
THE TRIAD SATELLITE AS A REAL-TIME CONTROLLER
OPERATING UNDER A PRIORITY INTERRUPT SYSTEM. IT
CONSISTS OF A DATA PROCESSOR, A MEMORY SECTION, AND A
POWER PROCESSOR. THE DATA PROCESSOR USES STANDARD
AND MEDIUM SCALE TTL INTEGRATED CIRCUITS ON HIGH
DENSITY MULTILAYER BOARDS. THE MEMORY SECTION, WITH
A CYCLE TIME OF 2.4 MICROSEC CONSISTS OF A 4K-WORD-
BY-16-BIT AEROSPACE MEMORY STACK AND HYBRID CIRCUITRY
FOR ADDRESS SELECTION AND DIGIT SENSING, PLUS A READ-
ONLY MEMORY CONTAINING A BOOTSTRAP LOADER PROGRAM.
THE POWER PROCESSOR PROVIDES POWER STORAGE PLUS
POWER LEVEL SELECTION UNDER PROGRAM CONTROL.
(MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 784 475 5/9 9/2
UNIVERSITY OF SOUTHERN CALIFORNIA LOS ANGELES BEHAVIORAL
TECHNOLOGY LABS

INTERACTIVE COMPUTER GRAPHICS FOR
PERFORMANCE-STRUCTURE-ORIENTED CAI. (U)

DESCRIPTIVE NOTE: SEMIANNUAL TECHNICAL REPT. 1 JAN-31
DEC 74.

JUL 74 38P RIGNEY, JOSEPH W. ; TOWNE,
DOUGLAS M. ; KING, CAROLE A. I
REPT. NO. TR-73
CONTRACT: N00014-67-A-0269-0025, ARPA ORDER-2284
PROJ: NR-154-326, RR042-06
TASK: RR042-06-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *COMPUTER AIDED INSTRUCTION, *COMPUTER
GRAPHICS, *INTERACTIVE GRAPHICS, SUBSTITUTES,
MECHANICAL COMPONENTS, OPERATION, COMPUTER
PROGRAMMING, LEARNING, RETENTION(PSYCHOLOGY),
VECTOR ANALYSIS, MINICOMPUTERS, DISPLAY SYSTEMS,
CORE STORAGE, MEMORY DEVICES (U)
IDENTIFIERS: COMPLEX DEVICES, INVISIBLE PROCESSES,
VECTOR GENERATION (U)

TWO DIFFERENT USES OF INTERACTIVE GRAPHICS IN CAI
ARE DESCRIBED. INTERACTIVE GRAPHICS MAY BE USED AS
SUBSTITUTES FOR PHYSICAL DEVICES AND OPERATIONS.
AN EXAMPLE IS SIMULATION OF OPERATING ON MAN/
MACHINE INTERFACES, SUBSTITUTING INTERACTIVE GRAPHICS
FOR CONTROLS, INDICATORS, AND INDICATIONS.
INTERACTIVE GRAPHICS MAY ALSO BE USED TO EXPLICATE
INVISIBLE PROCESSES. EXAMPLES ARE INTERACTIVE
GRAPHICS THAT ALLOW THE STUDENT TO INITIATE
ANIMATIONS OF PHYSICAL PROCESSES AND INTERACTIVE
BLOCK DIAGRAMS THAT ALLOW THE STUDENT TO LEARN THE
FUNCTIONAL ORGANIZATION OF COMPLEX DEVICES.
PROJECTS ARE UNDERWAY TO TEST THE EFFECTIVENESS OF
THESE USES. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 784 993 9/2
NAVAL RESEARCH LAB WASHINGTON D C

A FORTRAN PROGRAM TO UNPACK AND TRANSLATE
NINE TRACK MAGNETIC TAPE DATA.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
JUL 74 20P MOSKO, MARY ELLEN I
REPT. NO. NRL-MR-2844, NRL-COMPUTER BULL-39

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMS, *MAGNETIC TAPE,
SUBROUTINES, FORTRAN

(U)

IDENTIFIERS: CDC 3800 COMPUTERS

(U)

A FORTRAN PROGRAM HAS BEEN WRITTEN FOR THE CDC
3800 COMPUTER TO UNPACK DATA WHICH HAS BEEN READ FROM
NINE TRACK MAGNETIC TAPE AND TRANSLATE THE DATA FROM
EBCDIC-8, USASCII-8, OR CDC 3800 BCD CODE TO
CDC 3800 BCD CODE. THE TRANSLATED DATA CAN BE
RETURNED FROM THE SUBROUTINE IN THE FORM OF ONE
CHARACTER PER WORD OR EIGHT CHARACTERS PER WORD.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 784 994 9/2
NAVAL RESEARCH LAB WASHINGTON D C

A FORTRAN PROGRAM TO COPY NINE TRACK
MAGNETIC TAPE TO SEVEN TRACK MAGNETIC
TAPE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
JUL 74 27P MOSKO, MARY ELLEN ;
REPT. NO. NRL-MR-2845, NRL-COMPUTER BULL-40

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMS, *MAGNETIC TAPE,
FORTRAN, CONTROL SEQUENCES, ALGORITHMS,
TRANSLATORS

(U)

IDENTIFIERS: CDC 3800 COMPUTERS, TRANSLATOR
ROUTINES

(U)

A FORTRAN PROGRAM HAS BEEN WRITTEN FOR THE CDC
3800 COMPUTER TO TRANSLATE SPECIFIED FILES AND
RECORDS OF A NINE TRACK TAPE FROM EBCDIC-8,
USASCII-8, OR CDC 3800 BCD CODE, PACKS THIS
DATA EIGHT CHARACTERS PER WORD, AND WRITES THIS DATA
ONTO SEVEN TRACK TAPE. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 785 075 9/2
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS

SEVERAL STOCHASTIC MODELS OF COMPUTER
SYSTEMS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 73 278P COCHI, BERTRAND JEAN ;
REPT. NO. SU-SEL-74-035, TR-69
CONTRACT: N00014-67-A-0112-0044

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *QUEUEING
THEORY, *SCHEDULING, MEMORY DEVICES, INPUT OUTPUT
DEVICES, TIME SHARING, MATHEMATICAL MODELS,
STOCHASTIC PROCESSES, MARKOV PROCESSES, NETWORK
FLOWS, THESES

(U)

THE AUTHOR ANALYZES A CPU EXECUTING MORE THAN ONE
INSTRUCTION DURING A MEMORY CYCLE AND MAKING REQUESTS
TO AN INTERLEAVED MEMORY SYSTEM. THE ANALYSIS
LEADS TO AN EXPRESSION FOR THE EXPECTED NUMBER OF
INSTRUCTIONS EXECUTED PER MEMORY CYCLE IN TERMS OF
THE DEGREE OF INTERLEAVING, THE MAXIMUM NUMBER OF
INSTRUCTIONS EXECUTED PER MEMORY CYCLE AND THE
PARAMETERS REPRESENTING THE PROGRAM BEHAVIOR. IT
IS OBSERVED THAT THE USE OF MEMORY INTERLEAVING
INCREASES THE THROUGHPUT BY A FACTOR OF, AT MOST,
TWO. QUEUEING NETWORKS AND SEQUENCES OF QUEUEING
CENTERS ARE ANALYZED WHEN THE QUEUES HAVE FINITE
CAPACITY. OPEN AND CLOSED QUEUEING NETWORKS WITH
DIFFERENT PRIORITY CLASSES OF CUSTOMERS AND GENERAL
SERVICE TIME AND ARRIVAL TIME DISTRIBUTIONS,
DEPENDING ON THE PRIORITY CLASS OF THE CUSTOMER AND
THE SERVICE CENTER. FINALLY, THE EFFECTS OF THE
DISTRIBUTION OF SERVICE TIME AND THE LENGTH OF THE
QUANTUM ON THE MEAN WAITING TIME FOR DIFFERENT
QUANTUM CONTROLLED SERVICE DISCIPLINES ARE STUDIED.
(MODIFIED AUTHOR ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 785 355 9/2
FEDERAL COBOL COMPILER TESTING SERVICE WASHINGTON D C

SYNTHETIC PROGRAMS LIBRARY - CONCEPTS AND
FACILITIES.

(U)

DESCRIPTIVE NOTE: SOFTWARE.

JUN 74 1V

MONITOR: DOD/DF 74/002

UNCLASSIFIED REPORT

AVAILABILITY: SPECIFY TAPE RECORDING MODE DESIRED:
7 TRACK, 556 AND 800 BPI, ODD AND EVEN PARITY, BCD; OR
9 TRACK, 800 BPI ODD PARITY, EBCDIC. PRICE INCLUDES
USERS GUIDE, AD-785 357. COPIES NOT AVIALBLE FROM
DDC. ORDER DIRECTLY FROM NTIS.

DESCRIPTORS: *PROGRAMMING LANGUAGES, *COMPILERS,
*MAGNETIC TAPE, CONVERSION, CONTROL SEQUENCES,
COMPUTER PROGRAMS

(U)

IDENTIFIERS: *COBOL, *SYNTHETIC COMPUTER PROGRAMS,
BENCHMARK ROUTINES, UNIVAC 1108 COMPUTERS

(U)

A SMALL LIBRARY OF SYNTHETIC COBOL PROGRAMS HAS
BEEN DEVELOPED, AND EXPERIMENTS ARE BEING CONDUCTED
TO DETERMINE ITS SUITABILITY AS A SOURCE OF BENCHMARK
PROGRAMS. THE SYNTHETIC PROGRAMS ARE TASK-ORIENTED
AND COMPLETELY PORTABLE. PARAMETERS CAN BE VARIED
AT COMPILE TIME OR EXECUTE TIME, AND THE DESIGN OF
EACH PROGRAM IS SUITABLE TO EXTENSIONS, SO THAT A
WIDE RANGE OF EVENTUALITIES CAN BE ACCOMODATED.
THE BEHAVIOR OF THESE PROGRAMS, RUNNING
INDEPENDENTLY AND IN A MIX, HAS BEEN MEASURED.
SEVERAL PROBLEM AREAS HAVE BEEN UNCOVERED AND ARE
DISCUSSED IN THE ATTACHED PAPER. ALSO DISCUSSED
ARE POTENTIAL USES AND LIMITATIONS OF SYNTHETIC
PROGRAMS IN THE CONTEXT OF SYSTEM BENCHMARKS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 785 590 9/2

FEDERAL COBOL COMPILER TESTING SERVICE WASHINGTON D C

BENCHMARK PORTABILITY SYSTEM.

(U)

DESCRIPTIVE NOTE: SOFTWARE.

JUN 74 1V

MONITOR: DOD/DF 74/001

UNCLASSIFIED REPORT

AVAILABILITY: SPECIFY TAPE RECORDING MODE DESIRED;
7 TRACK, 556 AND 800 BPI, ODD AND EVEN PARITY, BCD; OR
9 TRACK, 800 BPI, ODD PARITY, EBCDIC. PRICE INCLUDES
USERS GUIDE, AD-785 356. COPIES NOT AVAILABLE FROM
DDC. ORDER DIRECTLY FROM NTIS.

DESCRIPTORS: *PROGRAMMING LANGUAGES, *COMPILERS,
*MAGNETIC TAPE, VALIDATION, CONVERSION, CONTROL
SEQUENCES, COMPUTER PROGRAMS

(U)

IDENTIFIERS: *COBOL, *BENCHMARK ROUTINES,
TRANSLATOR ROUTINES, COMPUTER PROGRAM
VERIFICATION, BENCHMARK PORTABILITY SYSTEM

(U)

THE REPORT PRESENTS THE SOFTWARE OF THE BENCHMARK
PORTABILITY SYSTEM ON MAGNETIC TAPE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 786 694 9/2
NAVAL RESEARCH LAB WASHINGTON D C

ON THE EXTERNAL STORAGE FRAGMENTATION
PRODUCED BY FIRST-FIT AND BEST-FIT
ALLOCATION STRATEGIES. (U)

DESCRIPTIVE NOTE: INTERIM REPT.,
JUL 74 32P SHORE, JOHN E. ;
REPT. NO. NRL-MR-2848
PROJ: NRL-54BD2-15, RF21-22
TASK: RF21-22-401

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: •MEMORY DEVICES, •ALLOCATIONS, (U)
STATISTICAL ANALYSIS, COMPUTER PROGRAMMING (U)
IDENTIFIERS: •COMPUTER STORAGE MANAGEMENT (U)

PUBLISHED COMPARISONS OF THE EXTERNAL FRAGMENTATION
PRODUCED BY FIRST-FIT AND BEST-FIT MEMORY ALLOCATION
HAVE NOT BEEN CONSISTENT. THROUGH SIMULATION, A
SERIES OF EXPERIMENTS WERE PERFORMED IN ORDER TO
OBTAIN BETTER DATA ON THE RELATIVE PERFORMANCE OF
FIRST-FIT AND BEST-FIT AND A BETTER UNDERSTANDING OF
THE REASONS UNDERLYING OBSERVED DIFFERENCES. THE
TIME-MEMORY-PRODUCT EFFICIENCIES OF FIRST-FIT BEST-
FIT WERE GENERALLY WITHIN ABOUT 1% OF EACH OTHER.
EXCEPT FOR SMALL POPULATIONS, THE SIZE OF THE
REQUEST POPULATION HAD LITTLE EFFECT ON ALLOCATION
EFFICIENCY. FOR EXPONENTIAL DISTRIBUTIONS OF
REQUESTS, FIRST-FIT OUTPERFORMED BEST-FIT, BUT FOR
NORMAL AND UNIFORM DISTRIBUTIONS, AND FOR EXPONENTIAL
DISTRIBUTIONS DISTORTED IN VARIOUS WAYS, BEST-FIT
OUTPERFORMED FIRST-FIT. (MODIFIED AUTHOR
ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 786 842 9/2
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE
VA

BRANCHED CORE LOGIC ELEMENTS, (U)

APR 74 19P VESELOVSKII, G. G. ;
ROZENBLAT, M. A. ; SUBBOTINA, G. V. ;
TSAREGRADSKII, F. I. ;
REPT. NO. FSTC-HC-23-346-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED TRANS. OF MONO. MAGNITNYE
ELEMENTY DISKRETNOGO DEISTVIYA, MOSCOW, 1972 P72-
80.

DESCRIPTORS: *LOGIC CIRCUITS, *MAGNETIC CORES,
BOOLEAN ALGEBRA, TRANSLATIONS, USSR (U)
IDENTIFIERS: LOGIC DESIGN (U)

ONE OF THE WAYS OF BOOSTING THE RELIABILITY AND
CUTTING THE COSTS OF MAGNETIC DIGITAL ELEMENTS AND
SYSTEMS IS CONSTRUCTING SYSTEMS OF MAGNETIC ELEMENTS
AND DEVICES WITH BRANCHED CORES; THIS SHARPLY REDUCES
THE TOTAL NUMBER OF CORES, WINDINGS, AND OTHER
COMPONENTS. THESE ELEMENTS AND DEVICES USED IN
MAKING WINDINGS OF THE SINGLE-TURN TYPE, OPEN UP THE
POTENTIALITY OF CONSTRUCTING INTEGRATED MAGNETIC
DIGITAL CIRCUITS BASED ON GROUP METHODS OF
MANUFACTURE. THIS POSSIBILITY IS DISCUSSED IN THE
REPORT. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 787 008 9/2
STANFORD UNIV CALIF DIGITAL SYSTEMS LAB

INTERFERENCE IN MULTIPROCESSOR COMPUTER
SYSTEMS WITH INTERLEAVED MEMORY.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 74 44p BASKETT, FOREST ; SMITH, ALAN
JAY ;
REPT. NO. STAN-CS-74-450, TR-90
CONTRACT: N00014-67-A-0112-0044, NSF-GJ-35720
PROJ: SRI-6930, SRI-6940

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *MULTIPROCESSORS, *MEMORY DEVICES,
MATHEMATICAL MODELS, MARKOV PROCESSES, QUEUEING
THEORY, COMPUTER PROGRAMMING, GRAPHICS

(U)

THE AUTHORS ANALYZE THE MEMORY INTERFERENCE CAUSED
BY SEVERAL PROCESSORS SIMULTANEOUSLY USING SEVERAL
MEMORY MODULES. THE EXACT RESULTS ARE COMPUTED FOR
A SIMPLE MODEL OF SUCH A SYSTEM. THE AUTHORS
DERIVE THE LIMITING VALUE FOR THE RELATIVE DEGREE OF
MEMORY INTERFERENCE AS THE SYSTEM SIZE INCREASES.
THE MODEL OF THE LIMITING BEHAVIOR OF THE SYSTEM
YIELDS APPROXIMATE RESULTS FOR THE SIMPLE MODEL AND
ALSO SUGGESTS THAT THE RESULTS ARE VALID FOR A MUCH
LARGER CLASS OF MODELS INCLUDING THOSE MORE NEARLY
LIKE REAL SYSTEMS THAN THE SIMPLE MODEL. THE
AUTHORS TEST THE ASSUMPTIONS AND RESULTS OF THE
SIMPLE MODEL AGAINST SOME MEASUREMENTS OF PROGRAM
BEHAVIOR AND SIMULATIONS OF SYSTEMS USING MEMORY
REFERENCES FROM REAL PROGRAMS. (MODIFIED AUTHOR
ABSTRACT)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 787 031 9/2
BROWN UNIV PROVIDENCE R I CENTER FOR COMPUTER AND
INFORMATION SCIENCES

REGIME BEHAVIOR IN PAGE REFERENCING
PATTERNS OF COMPUTER PROGRAMS,

(U)

JUL 74 105P SAMPSON, PAUL D. ;
REPT. NO. 28
CONTRACT: N00014-67-A-0191-0026

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PATTERN ANALYSIS.

DESCRIPTORS: *COMPUTER PROGRAMMING, *MEMORY DEVICES,
COMPILERS, FORTRAN

(U)

IDENTIFIERS: *PERFORMANCE EVALUATION,
COMPUMETRICS, *PAGING, COMPUTER STORAGE
MANAGEMENT

(U)

THE EXECUTION OF COMPUTER PROGRAMS IN MODERN
MULTIPROGRAMMED ENVIRONMENTS MUST BE FREQUENTLY
INTERRUPTED FOR REFERENCE TO INFORMATION STORED IN
DIFFERENT LEVELS OF MEMORY. IT FOLLOWS THAT THE
MANNER IN WHICH PROGRAMS REFERENCE STORED INFORMATION
IS OF PRIMARY IMPORTANCE IN THE EVALUATION OF
COMPUTER PERFORMANCE. THIS PAPER DESCRIBES A STUDY
OF SOME OF THE CHARACTERISTICS OF PROGRAM REFERENCING
PATTERNS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 787 677 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATA COMPUTER PROJECT. (U)

DESCRIPTIVE NOTE: SEMI-ANNUAL TECHNICAL REPT. 13 MAR-30
JUN 74.

JUN 74 96P
CONTRACT: MDA903-74-C-0225; ARPA ORDER-2687

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *DATA STORAGE SYSTEMS, *COMMUNICATIONS
NETWORKS, DATA PROCESSING, MEMORY DEVICES,
INTERFACES, COMPUTER PROGRAMMING, PROGRAMMING
LANGUAGES (U)

IDENTIFIERS: DATA COMPUTER PROJECT, *COMPUTER
NETWORKS, ARPA COMPUTER NETWORK (U)

THE DATA COMPUTER SYSTEM IS BEING DESIGNED AS A
LARGE-SCALE DATA STORAGE UTILITY TO BE ACCESSED FROM
REMOTE COMPUTERS ON THE ARPANET AND, POTENTIALLY,
ON OTHER NETWORKS. THE DEVELOPMENT IS PHASED, WITH
EACH SUCCESSIVE RELEASE OF THE SYSTEM OFFERING
INCREASED CAPABILITIES TO USERS. DURING THE
PRESENT REPORTING PERIOD, THE SECOND MAJOR RELEASE OF
THE SYSTEM BECAME OPERATIONAL. THIS RELEASE, WHILE
STILL PRIMITIVE IN MANY RESPECTS, IS BEGINNING TO
PROVIDE EXPERIENCE WITH ACTUAL APPLICATIONS AND USER
PROGRAMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 787 861 9/2
ROME AIR DEVELOPMENT CENTER GRIFFISS AFB N Y

AN INTRODUCTION TO RADC/DICEF'S C8500
COMPUTER SYSTEM.

(U)

AUG 74 101P STURDEVANT, NORMAN J. ;
REPT. NO. RADC-TR-74-215
PROJ: AF-4519

UNCLASSIFIED REPORT

DESCRIPTORS: *CENTRAL PROCESSING UNITS, MEMORY
DEVICES, LOGIC DEVICES, INPUT OUTPUT DEVICES,
COMPUTER PROGRAMMING

(U)

IDENTIFIERS: COLLINS 8500 COMPUTERS

(U)

THE INTENT OF THIS REPORT IS TWOFOLD. FIRST, IT
IS TO ESTABLISH A SINGLE DOCUMENT WHICH CAN PROVIDE
THE READER WITH A PRELIMINARY AND FUNDAMENTAL
UNDERSTANDING OF THE OPERATING CONCEPTS AND INHERENT
CAPABILITIES OF THE COLLINS C8500 COMPUTER
SYSTEM. SECONDLY, TO PROVIDE AN APPRAISAL OF THE
SUITABILITY AND UTILITY OF THE C8500 SYSTEM BASED
ON PROJECTED EXPERIMENTATION REQUIREMENTS IN DIRECT
SUPPORT OF RADC'S COMMUNICATIONS AND NAVIGATION
DIVISION MISSION. IT IS INTENDED THAT THIS
INFORMATION WILL PROVIDE THE READER WITH AN
UNDERSTANDING OF THE SYSTEM FROM A PROSPECTIVE USER'S
STANDPOINT. (MODIFIED AUTHOR ABSTRACT)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 787 870 8/2 9/2
INFORMATICS INC ROME N Y

LINEAL TO RASTER IMAGE CONVERSION SYSTEM.
VOLUME I, SYSTEM DESCRIPTION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. NOV 72-JUL 74,
AUG 74 37P STANNARD, JOHN E. , JR.;
HARODECKI, KENNETH D. ;
REPT. NO. TR-74-1574 VOL-1
CONTRACT: F30602-73-C-0086
MONITOR: RADC TR-74-233-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-787
871.

DESCRIPTORS: *MAPPING, *COMPUTER GRAPHICS,
*COMPUTER PROGRAMMING, PLOTTERS, MEMORY DEVICES,
INTERFACES
IDENTIFIERS: PDP-9 COMPUTERS, PDP-15
COMPUTERS

(U)

(U)

THIS REPORT DESCRIBES THE COMPUTER PROGRAMS WHICH
WERE WRITTEN TO PROVIDE (1) THE CONVERSION OF
DIGITAL DATA FROM A LINEAL FORMAT TO A RASTER IMAGE
FORMAT AND (2) THE CAPABILITY TO GENERATE AND
PLACE POINT SYMBOLS AND ALPHA-NUMERICS. ALSO
INCLUDED IN THE REPORT ARE THE RESULTS OF A STUDY
WHICH INVESTIGATED THE POSSIBILITY OF CONSOLIDATING
THE EXISTING CARTOGRAPHIC DIGITIZING PLOTTER
(CDP) SYSTEM AND EXPERIMENTAL COMPILATION
CONSOLE (ECC) SYSTEM. THE IMAGE CONVERSION
PROGRAMS OPERATE ON THE H635/645 COMPUTER AT RADC
AND THE PLACEMENT PROGRAMS ON THE PDP-9/PDP-15
COMPUTERS. THE CONSOLIDATED CDP/ECC SYSTEM
WOULD BE IMPLEMENTED ON THE PDP-9. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 787 871 8/2 9/2
INFORMATICS INC ROME N Y

LINEAL TO RASTER IMAGE CONVERSION SYSTEM.
VOLUME II, SOFTWARE DOCUMENTATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. NOV 72-JUL 74,
AUG 74 368P STANNARD, JOHN E. , JR.;
HARODECKI, KENNETH D. ;
REPT. NO. TR-74-1574 VOL-2
CONTRACT: F30602-73-C-0086
MONITOR: RADC TR-74-233-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *MAPPING, *COMPUTER GRAPHICS,
*COMPUTER PROGRAMMING, PLOTTERS, MEMORY DEVICES,
INTERPOLATION, CONTROL SEQUENCES

(U)

IDENTIFIERS: PDP-9 COMPUTERS, PDP-15
COMPUTERS

(U)

THIS VOLUME OF THE FINAL TECHNICAL REPORT PROVIDES
A DETAILED DESCRIPTION OF THE SOFTWARE WHICH WAS
IMPLEMENTED FOR THE LINEAL TO RASTER IMAGE
CONVERSION (LRIC) SYSTEM. THE LRIC SYSTEM
HAS INCREASED THE UTILITY OF THE ADVANCED
CARTOGRAPHIC SYSTEM (ACS) AT RADC BY ADDING
THE CAPABILITY TO ENTER POINT SYMBOLS OR ALPHANUMERIC
TEXT INTO THE DATA BASE AND MODIFYING THE FORMAT
CONVERSION PROCESS. THE SYMBOLS AND TEXT ARE
ENTERED VIA THE CRT CONNECTED TO THE PDP-15
COMPUTER WITHIN THE RADC EXPERIMENTAL
CARTOGRAPHIC FACILITY (ECF). THE LINEAL TO
RASTER CONVERSION, WITH ITS ASSOCIATED OUTPUT FORMAT
OPTIONS, IS PERFORMED ON THE H635/645 COMPUTER AT
RADC.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 900 282 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

AEROSPACE MULTIPROCESSOR EXECUTIVE. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. JUN 71-JAN 72,
JUN 72 205P KILBRIDE, KERRY E. ; IWASA,
LYNN E. ; SCHEID, JOHN F. ;
REPT. NO. SDC-TM-4940
CONTRACT: F33615-71-C-1745
PROJ: AF-4421, AF-6090
TASK: 609001
MONITOR: AFAL TR-72-82

UNCLASSIFIED REPORT

DESCRIPTORS: (*SUBROUTINES, DATA PROCESSING), (*COMPUTER
PROGRAMS, SUBROUTINES), REAL TIME, AIRBORNE, SPACEBORNE,
ERRORS, SCHEDULING, ALGORITHMS, INTERFERENCE, MEMORY
DEVICES, FAILURE(ELECTRONICS), INPUT OUTPUT DEVICES,
FLOW CHARTING (U)

IDENTIFIERS: AVIONICS, COMPUTER PROGRAMS, COROUTINES,
*EXECUTIVE ROUTINES, MESSAGE TRAFFIC, COMPUTERS,
MULTIPLE OPERATION, MULTIPROGRAMMING, PARALLEL
PROCESSING (U)

THE PURPOSE OF THE PROJECT WAS TO PRODUCE A
FLEXIBLE AND SIMPLE EXECUTIVE STRUCTURE, SUPPORTING A
BROAD SPECTRUM OF APPROACHES TO SCHEDULING, PARALLEL
PROCESSING, RESOURCE ALLOCATION AND GRACEFUL
DEGRADATION. THE EXECUTIVE ITSELF MUST BE CAPABLE
OF OPERATING DEDICATED TO A SINGLE PROCESSOR, TO
FLOAT FREELY AMONG PROCESSORS, OR ANY COMBINATION OF
THE TWO METHODS. THE EXECUTIVE MUST HAVE WIDE
APPLICABILITY AMONG MANY TYPES OF MULTIPROCESSOR
DEVICES AND REAL-TIME DATA PROCESSING APPLICATIONS.
THE EXECUTIVE STRUCTURE IS TO BE USED IN FUTURE
GROUND-BASED, AIRBORNE AND SPACEBORNE APPLICATIONS BY
TAILORING THE DESIGN TO GIVEN SPECIFIC MISSION
COMPUTING REQUIREMENTS. THIS APPROACH IS EXPECTED
TO AVOID THE CONVENTIONAL DIFFICULTIES OF SOFTWARE
PRODUCTION BY FACILITATING TIMELY AND ORDERLY
PLANNING AND IMPLEMENTATION OF SOFTWARE FOR AEROSPACE
MULTIPROCESSORS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 907 626 17/2 9/2 5/2
RAND CORP SANTA MONICA CALIF

INFORMATION PROCESSING/DATA AUTOMATION
IMPLICATIONS OF AIR FORCE COMMAND AND
CONTROL REQUIREMENTS IN THE 1980S (CCIP-85).
VOLUME V. TECHNOLOGY TRENDS:
HARDWARE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
JAN 73 281P TURN, REIN : SINE, BARRY ;
REPT. NO. R-1011-PR
CONTRACT: F44620-67-C-0045
PROJ: AF-1306
MONITOR: SAMSO, SAMSO XRS-71-1-VOL-5, TR-72-122-
VOL-5

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*COMMAND AND CONTROL SYSTEMS, *DATA
PROCESSING), (*DIGITAL COMPUTERS, AIR FORCE OPERATIONS),
INFORMATION RETRIEVAL, PLANNING, INTEGRATED SYSTEMS,
SCIENTIFIC RESEARCH, MILITARY REQUIREMENTS, AUTOMATION,
COMPUTER PROGRAMMING, WAR GAMES, COMPUTERS, DATA STORAGE
SYSTEMS, RECORDING SYSTEMS, MANEUVERS, MATHEMATICAL
ANALYSIS, SEMICONDUCTORS, COMMUNICATIONS CENTRAL, GLOBAL
COMMUNICATION SYSTEMS, SURVIVAL (PERSONNEL), NUCLEAR
EXPLOSIONS, MEMORY DEVICES, COMPUTER LOGIC, ANALOG-
DIGITAL COMPUTERS, COMPUTERS, GATES (CIRCUITS),
ELECTROOPTICS, DISPLAY SYSTEMS

(U)

IDENTIFIERS: AMORPHOUS MATERIALS, SEMICONDUCTORS,
ASSOCIATIVE PROCESSORS, AVIONICS, COMPUTER PROGRAMS,
HEAD UP DISPLAYS, *INFORMATION PROCESSING, LARGE SCALE
INTEGRATION, MAGNETIC BUBBLES, MASS MEMORIES, METAL
OXIDE SEMICONDUCTORS, PLATED WIRE MEMORIES, RANDOM
ACCESS MEMORIES, TECHNOLOGICAL FO

(U)

THIS VOLUME OF THE CCIP-85 STUDY REPORT DESCRIBES
CURRENT STATE OF THE ART OF DIGITAL-COMPUTER-HARDWARE
TECHNOLOGY AND FORECASTS THE APPLICATION OF THIS
TECHNOLOGY TO AIR FORCE COMMAND AND CONTROL
SYSTEMS OVER THE NEXT 20 YEARS. ESTIMATES OF THE
TECHNICAL CHARACTERISTICS AND CAPABILITIES OF DATA-
PROCESSING SYSTEMS, SUBSYSTEMS, AND COMPONENTS THAT
ARE LIKELY TO BE AVAILABLE OR THAT COULD BE DEVELOPED
FOR AIR FORCE COMMAND AND CONTROL SYSTEM
APPLICATIONS IN THE 1980S ARE GIVEN. THE APPROACH
TAKEN HAS BEEN CALLED 'SURPRISE-FREE' TECHNOLOGICAL
FORECASTING,

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 908 524 9/4 17/2
ELECTRONIC COMMUNICATIONS INC ST PETERSBURG FLA

DIGITAL INTERFACE CODE CONVERTER.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 23 JUN 71-23 DEC 72,
JAN 73 SOP BETTS, WILLIAM L. IMOORE,
WILLIAM H. ISTAUDT, FEATHER A. I
REPT. NO. ECI-1-AER-0035
CONTRACT: DAAB07-71-C-0344
MONITOR: ECOM 0344-F-71

UNCLASSIFIED REPORT

DESCRIPTORS: (*CODING, DIGITAL SYSTEMS), (*DATA
TRANSMISSION SYSTEMS, COMMUNICATION SYSTEMS!,
INTERFACES, PULSE CODE MODULATION, MULTIPLEXING,
MAPPING, SIMULATION, MEMORY DEVICES, INFORMATION THEORY,
SYNCHRONIZATION(ELECTRONICS), ANALOG SYSTEMS, DETECTORS,
MATHEMATICAL MODELS (U)

IDENTIFIERS: *CODE CONVERTERS, COMPUTERIZED
SIMULATION, READ ONLY MEMORIES, STRATEGIC
COMMUNICATIONS, TACTICAL COMMUNICATIONS (U)

THE DESIGN, DEVELOPMENT, FABRICATION, AND TESTING
OF ONE EXPLORATORY DEVELOPMENT MODEL OF THE DIGITAL
INTERFACE CODE CONVERTER WAS COMPLETED. THE
CODE CONVERTER INTERFACES TWO PCM MULTIPLEXERS
WHICH UTILIZE DIFFERENT COMPANDING CHARACTERISTICS,
BIT RATES, SYNCHRONIZATION CODE FORMATS, AND
SIGNALLING FORMATS. THE AACOMS TD-352 AND TD-
660 TACTICAL MULTIPLEXERS WHICH USE A 6-BIT
QUANTIZED, 3 SEGMENT COMPANDED PCM FORMAT ARE
DIGITALLY INTERFACED TO THE STRATEGIC TD-968
MULTIPLEXER WHICH USES AN 8-BIT QUANTIZED, 15 SEGMENT
COMPANDED PCM FORMAT. CONVERSIONS BETWEEN THE
TACTICAL IN-BAND TONE SIGNALLING FORMAT AND THE
STRATEGIC E AND M SIGNALLING FORMAT ARE MADE BY
THE CODE CONVERTER. THE CURRENT INTERFACE IS ON A
SERIAL 12-CHANNEL BASIS AND A DESIGN PLAN HAS BEEN
DEVELOPED FOR IMPLEMENTATION OF A 24-CHANNEL
INTERFACE USING TD-204 OR TD-754 COMBINERS.
RATE CONVERSION IS PERFORMED VIA FREQUENCY
MULTIPLYING PHASE LOCKED LOOPS, FRAME SYNCHRONIZATION
IS ESTABLISHED, A MAPPING BETWEEN THE 2 CODES IS
PERFORMED VIA READ-ONLY MEMORIES, AND SIGNALLING
INFORMATION CONVERSION IS PERFORMED VIA A PHASE
LOCKED LOOP TONE DETECTOR AND A DIGITAL TONE
GENERATOR. THE MAPPING OPTIMIZES PERFORMANCE IN THE
AREAS OF SIGNAL-TO-IDLE CHANNEL NOISE RATIO, SIGNAL-
TO-QUANTIZING NOISE RATIO, (U)

117
UNCLASSIFIED

/ZOM07

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 911 659 9/2
AIR FORCE WEAPONS LAB KIRTLAND AFB N MEX
PLATED-WIRE MEMORY STATE-OF-THE-ART STUDY
(1972).

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. 1 OCT-30 NOV 72,
JUN 73 57P IVES, JOHN M. I
REPT. NO. AFWL-TR-73-115
PROJ: AF-8809
TASK: 880903

UNCLASSIFIED REPORT

DESCRIPTORS: (*MEMORY DEVICES, STATE-OF-THE-ART
REVIEWS), DAMAGE, RADIATION EFFECTS, HARDENING, MAGNETIC
FIELDS, SWITCHING CIRCUITS, COSTS, INPUT OUTPUT DEVICES,
WIRE, COILS, HELIXES, SURFACE PROPERTIES, FILMS,
TRANSFORMERS, NUCLEAR RADIATION, VULNERABILITY,
DECODING (U)
IDENTIFIERS: NONDESTRUCTIVE READOUTS, *PLATED WIRE
MEMORIES, RADIATION HARDENING (U)

A WIRE PLATED WITH A MAGNETIC SURFACE CAN BE USED
AS A COMPUTER MEMORY ELEMENT BY ALTERNATING THE
POLARITY OF THE MAGNETIC FIELD. WHILE THE WIRE IN
DIFFERENT ENCLOSURE CONFIGURATIONS CAN HOLD ITS FIELD
IN EITHER A LONGITUDINAL OR A RADIAL DIRECTION, THE
RADIALLY ORIENTED FIELD CURRENTLY IS FOUND TO HAVE
MANY ADVANTAGES WITH RESPECT TO SWITCHING SPEED,
RADIATION HARDNESS, AND ASSOCIATED PERIPHERAL
EQUIPMENT. THE CONSTRUCTION OF THE WIRE PRESENTS
MANY PARAMETER BALANCING PROBLEMS AND NEEDS VERY
TIGHT ENVIRONMENTAL CONTROLS FOR PRACTICAL
PRODUCTION. THESE PROBLEMS HAVE NOT YET BEEN
ELIMINATED, KEEPING THE BIT COST IN THESE MEMORIES
HIGH. THE PERFORMANCE, HOWEVER, OF THE RADIALLY
ORIENTED TYPE COMPARED TO FERRITE CORES AND
SEMICONDUCTOR MEMORIES AUGMENTS THIS HIGH COST. A
RECENTLY DEVELOPED 2-MIL WIRE SIZE ELEMENT ELIMINATES
SOME OF THE PROBLEMS FOUND IN THE PREVIOUSLY STANDARD
5-MIL WIRE SYSTEMS. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 911 826 9/5 9/1 9/2
ROCKWELL INTERNATIONAL CORP ANAHEIM CALIF AUTONETICS
DIV

RELIABILITY EVALUATION OF LSI
MICROCIRCUITS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. APR 71-OCT 72,
MAY 73 211P LINDWEDEL, JAMES H. ;
REPT. NO. C72-1032/201
CONTRACT: F30602-71-C-0230
MONITOR: RADC TR-73-127

UNCLASSIFIED REPORT

DESCRIPTORS: (*INTEGRATED CIRCUITS, TEST METHODS),
(*SEMICONDUCTOR DEVICES, RELIABILITY(ELECTRONICS)),
SEMICONDUCTOR DIODES, SILICON, MOLYBDENUM, DOPING,
HERMETIC SEALS, SHIFT REGISTERS, LOGIC CIRCUITS,
GATES(CIRCUITS), MEMORY DEVICES, DIGITAL COMPUTERS,
CLOCKS, DRIFT, FAILURE(ELECTRONICS), PREDICTIONS,
DAMAGE, RADIATION EFFECTS

(U)

IDENTIFIERS: BUFFER STORAGE, COMPLEMENTATRY METAL
OXIDE SEMICONDUCTORS, COUNTING CIRCUITS, ION
IMPLANTATION, *LARGE SCALE INTEGRATION, METAL OXIDE
SEMICONDUCTORS, P CHANNEL METAL OXIDE SEMICONDUCTORS,
RANDOM ACCESS MEMORIES, SCHOTTKY BARRIER DEVICES,
SEMICONDUCTOR DIODES

(U)

THE OBJECTIVES OF THIS EVALUATION WERE TO (1)
DEFINE COMMON FAILURE MODES; (2) DOCUMENT FAILURE
ANALYSIS; AND (3) DEVELOP BETTER AND LOWER COST
ELECTRICAL AND STRESS TEST TECHNIQUES FOR PREDICTING,
ASSESSING, AND ASSURING THE RELIABILITY OF LSI
MICROCIRCUITS. THE APPROACH TO THE EVALUATION
INCLUDED A CANVASS OF THE INDUSTRY FOR FAILURE MODES
EXPERIENCED, TESTS USED, AND AVAILABLE PROCESS AND
LOGIC FUNCTION TYPES. NEXT, AN OPTIMIZED AND
PRACTICAL SET OF ELECTRICAL TESTS AND ELECTRICAL-
THERMAL STRESS TESTS WERE FORMULATED FOR A QUANTITY
OF 595 DEVICES SELECTED HAVING HERMETICALLY SEALED
PACKAGES AND MANUFACTURING DATE IN THE FIRST QUARTER
OF 1971. PROCESS TYPES INCLUDED PMOS, PMOS ION
IMPLANT, PMOS SILICON GATE, PMOS MOLYBDENUM GATE,
CMOS, BIPOLAR, DISCRETIONARY WIRED BIPOLAR AND
SCHOTTKY DIODE CLAMPED BIPOLAR. LOGIC FUNCTIONS
INCLUDED A DECADE COUNTER, FIVE SHIFT REGISTERS, A
DIGITAL MULTIPLIER, FIVE RANDOM ACCESS MEMORIES, AND
A TIME BUFFER REGISTER. FOLLOWING THE STRESS TESTS,
DEVICES WERE LIFE TESTED AT 125 C UNDER DYNAMIC
EXCITATION, POWER AND LOAD.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 912 632 5/2 9/2
NAVAL ELECTRONICS LAB CENTER SAN DIEGO CALIF

ANALYSIS OF HARDWARE AND SOFTWARE STORAGE AND
RETRIEVAL FUNCTIONS.

(U)

DESCRIPTIVE NOTE: TECHNICAL DOCUMENT,
JUL 73 52P SHEN, JOHN T. ;
REPT. NO. NELC-TD-259
PROJ: NELC-Z401

UNCLASSIFIED REPORT

DESCRIPTORS: (*INFORMATION RETRIEVAL, MEMORY DEVICES),
(*DATA STORAGE SYSTEMS, COMPUTER PROGRAMS), DIGITAL
COMPUTERS, DATA PROCESSING, COSTS, ELECTROMAGNETIC
COMPATIBILITY, MAINTENANCE, RELIABILITY(ELECTRONICS),
DATA, ALGORITHMS, COMPUTER LOGIC,
SEQUENCES(MATHEMATICS), STATISTICAL ANALYSIS,
INEQUALITIES, DISKS, SIMULATION, COMPILERS (U)
IDENTIFIERS: AN/UYK-7, COMPUTER HARDWARE, COMPUTER
FILES, *COMPUTER PROGRAMS, COMPUTERIZED SIMULATION,
DATA ACQUISITION, DATA BASES, DELAY TIME, FILE
STRUCTURE, FIRMWARE, MAGNETIC DISK STORAGE, MAGNETIC
DRUM STORAGE, COMMAND AND CONTROL SYSTEMS, NAVY,
SHIPBOARD, TACTICAL INTELLIGENCE, PARALLEL
PROCESSING (U)

THIS REPORT PRESENTS THE RESULTS OF AN ANALYSIS OF
THE INFORMATION STORAGE AND RETRIEVAL (ISAR)
FUNCTIONS OF SEVERAL NAVY ISAR SYSTEMS. THE
ANALYSIS WAS PERFORMED TO PROVIDE FURTHER SUPPORT TO
THE ADVANCED SOFTWARE TECHNOLOGY DIVISION FOR
PROJECT 2175. IN BRIEF, THE GUIDING PHILOSOPHY OF
PROJECT 2175 IS TO DETERMINE THE FEASIBILITY OF
MECHANIZING STORAGE AND RETRIEVAL FUNCTIONS IN
MODULAR BUILDING BLOCKS BY COMBINATIONS OF HARDWARE,
FIRMWARE AND SOFTWARE. RECENT STUDIES HAVE BORNE
WITNESS TO THE GROWING CONCERN WITH A NUMBER OF
PROBLEMS INCIDENT TO THE ACQUISITION AND OPERATION OF
COMPUTER-BASED STORAGE AND RETRIEVAL SYSTEMS. IN
ESSENCE, THESE PROBLEMS INCLUDE THE FOLLOWING:
(1) INCREASING SYSTEM DEVELOPMENT COSTS; (2)
EXTENSIVE TIME REQUIRED TO ACQUIRE NEW SYSTEMS;
(3) THE VARIETY OF INCOMPATIBLE SYSTEMS AND
COMPONENTS; (4) EVOLVING REQUIREMENTS PRECIPITATED
BY THE GROWING COMPLEXITY OF MODERN WARFARE;
(5) INCREASING COSTS OF MAINTAINING MULTIPLE
SYSTEMS AND COMPONENTS; (6) LIMITED RELIABILITY OF
SYSTEM SOFTWARE AND (7) THE TREND TOWARD REDUCED
FUNDING RESOURCES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 912 646 9/2 20/4
AIR FORCE ARMAMENT LAB EGLIN AFB FLA

A COMPUTER PROGRAM FOR EXTRACTING
AERODYNAMIC DATA FROM MAGNETIC TAPE.

(U)

DESCRIPTIVE NOTE: FINAL REPT. APR-JUN 73,
JUL 73 33P ROGERS, ROBERT M. I
REPT. NO. AFATL-TR-73-147
PROJ: AF-670D

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS, AERODYNAMIC
CHARACTERISTICS), WIND TUNNEL MODELS, TEST FACILITIES,
DATA, DATA PROCESSING, MAGNETIC TAPE, DIGITAL COMPUTERS,
SUBROUTINES, PROGRAMMING LANGUAGES, AUTOMATION, PUNCHED
CARDS, AERODYNAMICS (U)

IDENTIFIERS: CDC 6600 COMPUTERS, *DATA ACQUISITION,
*EXTRACTION, FORTRAN, FORTRAN 4 PROGRAMMING
LANGUAGE (U)

THIS REPORT DESCRIBES A FORTRAN IV COMPUTER
PROGRAM THAT EXTRACTS AERODYNAMIC DATA FROM A
MAGNETIC TAPE PREPARED FROM DATA TAPES SUPPLIED BY
WIND TUNNEL TEST FACILITIES. THE PROGRAM IS
DESIGNED FOR USE ON A CDC 6600 COMPUTER SYSTEM
ALONG WITH AN S-C 4020 COMPUTER RECORDER
(PLOTTER). THE DATA SYSTEMS DEVELOPED BY THE
ARNOLD ENGINEERING DEVELOPMENT CENTER IS USED
AS A MODEL TO DESIGN THE DATA EXTRACTION STATEMENTS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 912 732 15/3.1 9/2
IBM FEDERAL SYSTEMS DIV GAITHERSBURG MD

PRELIMINARY BMD SOFTWARE DEVELOPMENT FOR IBM
MULTIPROCESSING SYSTEM.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
JUL 73 138P GILBERT, J. G. ;
CONTRACT: DAHC60-72-C-0091

UNCLASSIFIED REPORT

DESCRIPTORS: (*ANTIMISSILE DEFENSE SYSTEMS, DATA
PROCESSING), COMPUTER PROGRAMMING, DIGITAL COMPUTERS,
REAL TIME, COMPUTER PROGRAMS, SEARCH RADAR, ACQUISITION
RADAR, RADAR TRACKING, FLOW CHARTING, SHIFT REGISTERS,
SIMULATION, MEMORY DEVICES, SCHEDULING, SIMULATORS (U)
IDENTIFIERS: *COMPUTER PROGRAMS, HARDSITE DEFENSE, IBM
370 COMPUTERS, IBM 360 COMPUTERS, *COMPUTERS,
*MULTIPLE OPERATION, PARALLEL PROCESSORS (U)

THIS FINAL TECHNICAL REPORT DESCRIBES THE
ACHIEVEMENTS OF THE IBM FEDERAL SYSTEMS
DIVISION OVER THE TECHNICAL PERFORMANCE PERIOD FOR
THE CONTRACT. THIS REPORT IS MADE UP OF FOUR
SECTIONS. SECTION 1 CONTAINS THE CONTRACT SUMMARY,
THE CONTRACT SCOPE, AND THE CONCLUSIONS AND
RECOMMENDATIONS DRAWN FROM THE RESULTS OF THE
EFFORT. SECTION 2 PRESENTS A GENERAL DISCUSSION OF
THE ROLE OF THE MULTIPROCESSOR IN BALLISTIC MISSILE
DEFENSE APPLICATIONS. SECTION 3 CONTAINS A
DESCRIPTION OF THE MPS HARDWARE. SECTION 4
PRESENTS THE DESCRIPTION OF THE SOFTWARE UTILIZED IN
THE SIMULATION DEMONSTRATION AND THE RESULTS AND
CONCLUSIONS OF THE SIMULATION DEMONSTRATION HELD AT
THE ABMDA HAPDAR FACILITY ON 30 JUNE 1973. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD- 914 517 9/2 15/3.1 17/9
RAYTHEON CO WAYLAND MASS EQUIPMENT DIV

ADVANCED DIGITAL SIGNAL PROCESSOR DESIGN
STUDY. VOLUME II. DESIGN CONCEPT.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 4 APR-4 NOV 73,
NOV 73 224P ALLEN, T. ; GLASS, J. ; HYNES,
R. ; PERKINS, D. ;
REPT. NO. ER73-4426-VOL-2
CONTRACT: DAHC60-73-C-0065
PROJ: DA-62304-A

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING, DIGITAL SYSTEMS), MEMORY
DEVICES, PULSE COMPRESSION, MATCHED FILTERS, WAVEFORM
GENERATORS, DIGITAL TO ANALOG CONVERTERS, BANDWIDTH,
COMPUTER PROGRAMMING, DATA STORAGE SYSTEMS, INTERFACES,
ANTIMISSILE DEFENSE SYSTEMS, MULTIPLEXING, TRAILING
EDGE, RADAR, POWER SUPPLIES, RELIABILITY(ELECTRONICS),
SEQUENCES(MATHEMATICS), ALGORITHMS, VIDEO SIGNALS,
SPECIFICATIONS, BROADBAND, SHIFT REGISTERS, DETECTION,
LEADING EDGES (U)

IDENTIFIERS: *SIGNAL PROCESSING, DATA MANAGEMENT,
SIGNAL PROCESSING, LOCAL OSCILLATORS, FLIP FLOPS,
FOURIER TRANSFORMATION, BUTTERWORTH FILTERS, RANDOM
ACCESS MEMORIES, METAL OXIDE SEMICONDUCTORS, POST
PROCESSORS (U)

THIS VOLUME DESCRIBES A DESIGN CONCEPT OF A DIGITAL
SIGNAL PROCESSOR DESIGNED TO MEET THE SPECIFIED
SYSTEM REQUIREMENTS. THE CONCEPT USES THE
TECHNIQUES RECOMMENDED AS A RESULT OF THE STUDIES
DESCRIBED IN VOLUME I. EACH OF THE FOLLOWING
SUBSYSTEMS ARE DESCRIBED SEPARATELY: DIGITAL
WAVEFORM GENERATOR, IF CONVERSION, INPUT
DATA MANAGEMENT, MATCHED FILTER, POST
PROCESSOR, TEST SEQUENCE CONTROLLER, AND
CONTROL AND INTERFACE. IN ADDITION, A
MECHANICAL DESIGN CONCEPT, THERMAL ANALYSIS, AND
RELIABILITY ANALYSIS FOR THE CONCEPT DESCRIBED ARE
INCLUDED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO: /ZOM07

AD- 923 480 8/2 5/2 14/5
ARMY ENGINEER TOPOGRAPHIC LABS FORT BELVOIR VA

A SYSTEM FOR TOPOGRAPHIC INQUIRY. NUMBER 1.
MICROGRAPHIC SUBSYSTEM.

(U)

DESCRIPTIVE NOTE: FINAL REPT. OCT 70-SEP 73,
MAY 74 40P GUNTHER, ALDEN C. ;
REPT. NO. ETL-ETR-74-2
PROJ: DMA-4304

UNCLASSIFIED REPORT

DESCRIPTORS: (*TOPOGRAPHIC MAPS, DATA STORAGE
SYSTEMS), (*MICROFORM, MANAGEMENT INFORMATION
SYSTEMS), MANAGEMENT PLANNING AND CONTROL, DATA
MANAGEMENT, TERRAIN INTELLIGENCE, INFORMATION
RETRIEVAL, DATA REDUCTION, ACCURACY, DISTORTION,
RESOLUTION, DISPLAY SYSTEMS, COMPUTER PROGRAMS,
HANDLING, SPECIFICATIONS, GRAPHICS, DATA
PROCESSING, DATA BASES, REMOTE TERMINALS, VIEWERS,
DISPLAY SYSTEMS

(U)

IDENTIFIERS: STOPIN(SYSTEM FOR TOPOGRAPHIC
INQUIRY), SYSTEM FOR TOPOGRAPHIC INQUIRY,
COMPUTER SOFTWARE, *TOPOGRAPHIC INFORMATION
SYSTEMS, MICROGRAPHIC SYSTEMS

(U)

THE PURPOSE OF THE DEVELOPMENT WAS TO DEMONSTRATE
THE CONCEPT OF MICROFORM TOPOGRAPHIC DATA STORAGE AND
TO DEVELOP A SOFTWARE PACKAGE TO CONTROL A
MICROGRAPHIC SYSTEM. A COMMERCIALY AVAILABLE
SYSTEM WAS LEASED FOR EXPERIMENTATION, AND A SET OF
SPECIFICATIONS FOR OPERATIONAL HARDWARE WAS
DEVELOPED. A SOFTWARE DESCRIPTION, THE PROPOSED
HARDWARE SPECIFICATIONS, AND A PILOT TEST OPERATION
FLOWCHART ARE INCLUDED IN THE REPORT.

(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A000 226 9/2
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE
VA

A BINARY OUTPUT ELEMENT FOR LOGICAL AND
SWITCHING DEVICES ON FERROMAGNETIC SINGLE
CRYSTALS,

(U)

FEB 74 10P BOYARCHENKOV, M. A. ;
PALAGASHVILI, YA. SH. ; ROSENTHAL, YU. D. ;
KHOMERIKI, O. K. ;
REPT. NO. FSTC-HT-23-1823-73

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF AVTOMATIKA I
TELEMEKHANIKA (USSR) N3 P185-187 1973.

DESCRIPTORS: *MAGNETIC DETECTORS, MAGNETIC DOMAINS,
MEMORY DEVICES, FERROMAGNETIC MATERIALS, SINGLE
CRYSTALS, LOGIC DEVICES, BINARY PROCESSORS,
TRANSLATIONS, USSR

(U)

THE ARTICLE DESCRIBES USES FOR DEVICES, BASED ON
HALL'S DOMAIN DETECTOR, IN READ-OUT COMPUTER
TECHNIQUES. THE GALVANOMAGNETIC METHOD IS MOST
WIDELY USED BECAUSE OF ITS SIMPLICITY AND EASE OF
ADAPTABILITY. RESULTS OF TESTING SHOWED THAT THESE
DEVICES GIVE READINGS WHICH ARE NOT AFFECTED BY THE
FIELD OF DISPLACEMENT, AND CAN BE USED AT HIGH
TEMPERATURES.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A000 242 14/5 9/2
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER CHARLOTTESVILLE
VA

CERTAIN PROBLEMS IN THE DEVELOPMENT OF
PHOTOCHROMATIC DEVICES FOR INFORMATION
STORAGE AND REPRODUCTION,

(U)

JUN 74 5P ASRATYAN, A. A. ;
REPT. NO. FSTC-HT-23-0458-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED TRANS. OF MONO. AKTUALNYE
TEKHNICHESKOI KIBERNETIKI, MOSCOW, 1972 P256-257.

DESCRIPTORS: *PHOTOCHROMISM, *PHOTOGRAPHIC RECORDING
MEDIA, *DATA STORAGE SYSTEMS, ELECTROOPTICS, FIBER
OPTICS, INFRARED RADIATION, TRANSLATIONS, USSR

(U)

IDENTIFIERS: *PHOTOCHROMIC STORAGE SYSTEMS

(U)

A DESCRIPTION IS PRESENTED OF A DEVICE FOR
REPRODUCING AND STORING INFORMATION BY A PHOTOCROMIC
METHOD. INFORMATION IS FED INTO THE DEVICE WHERE
IT UNDERGOES IRRADIATION PROCESSING. AS THE DEVICE
TURNS, THE REQUIRED INFORMATION IS RECORDED AT ANY
POINT DEPENDING ON THE RESOLUTION CAPABILITY OF A
WAVEBEAM STRIP.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A000 294 9/2
PROBE CONSULTANTS INC PHOENIX ARIZ

THE PILER SYSTEM OF COMPUTER PROGRAM
TRANSLATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
SEP 74 151P BARBE, PENNY ;
REPT. NO. PLR-020
CONTRACT: N00014-67-C-0472
PROJ: NR-049-233

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *COMPUTER PROGRAMMING, *TRANSLATORS,
COMPILERS, INTERPRETERS, MEMORY DEVICES,
MATHEMATICAL LOGIC
IDENTIFIERS: *PILER TRANSLATOR, TRANSLATOR
ROUTINES

(U)

(U)

THE AUTOMATIC TRANSLATION OF COMPUTER PROGRAMS FROM ONE LANGUAGE TO ANOTHER IS THE ULTIMATE GOAL OF THIS RESEARCH PROJECT. THE TRANSLATION OF PROGRAMS IS A PRIMARY CONCERN OF USERS ANTICIPATING AN UPGRADING OR REPLACEMENT OF COMPUTER HARDWARE CURRENTLY IN USE. IT IS ALSO NECESSARY TO ENABLE MANY USERS TO SHARE OR PURCHASE APPLICATIONS PROGRAMS. ECONOMIC CONSIDERATIONS DICTATE THE GENERAL CHARACTERISTICS OF THE TRANSLATOR. BECAUSE OF THE VOLUME OF EXISTING PROGRAMS AND THE COST OF MANUAL REPROGRAMMING, THE TRANSLATOR SHOULD BE AS NEARLY AUTOMATIC AS POSSIBLE. BECAUSE OF THE COMPLEXITY OF SUCH A TRANSLATOR, WHICH MEANS HIGH DEVELOPMENTAL COST AND TIME, IT MUST BE AS GENERALIZED AS POSSIBLE. THE DESIGN OF THE TRANSLATING SYSTEM DEVELOPED THROUGH WORK ON THIS PROJECT STRESSES FLEXIBILITY IN THE USE OF THE SYSTEM, ALLOWING IT TO FULFILL ALTERNATE GOALS. PORTIONS OF THE SYSTEM MAY BE USED TO PROVIDE UNIFORM DOCUMENTATION OF PROGRAMS, OR AS DEBUGGING AIDS, OR FOR PROGRAM OR COMPILER EVALUATION.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A000 556 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

INTERFACE MESSAGE PROCESSORS FOR THE ARPA
COMPUTER NETWORK.

(U)

DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT. NO. 7, 1
JUL-30 SEP 74.

OCT 74 63P
REPT. NO. BBN-2913
CONTRACT: F08606-73-C-0027
PROJ: AF-2351

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: •DATA PROCESSING TERMINALS,
•COMMUNICATIONS NETWORKS, INTERFACES, MESSAGE
PROCESSING, MEMORY DEVICES, SATELLITE COMMUNICATIONS (U)
IDENTIFIERS: •ARPA COMPUTER NETWORK, IMP(INTERFACE
MESSAGE PROCESSORS), •INTERFACE MESSAGE
PROCESSORS (U)

THE ARPA COMPUTER NETWORK PROVIDES A
COMMUNICATION MEDIUM WHICH ALLOWS DISSIMILAR
COMPUTERS (HOSTS) TO INTERCHANGE INFORMATION.
EACH HOST IS CONNECTED TO AN INTERFACE
MESSAGE PROCESSOR (IMP), AND IMPS ARE
INTERCONNECTED BY LEASED COMMON CARRIER CIRCUITS.
THERE IS FREQUENTLY NO DIRECT CIRCUIT BETWEEN TWO
COMMUNICATING HOSTS, AND THE INTERMEDIATE IMPS
STORE AND FORWARD THE INFORMATION. IMPS REGULARLY
EXCHANGE INFORMATION WHICH IS USED TO ADAPT ROUTING
TO CHANGING NETWORK CONDITIONS. IMPS ALSO REPORT A
VARIETY OF PARAMETERS TO A NETWORK CONTROL
CENTER, WHICH COORDINATES DIAGNOSIS AND REPAIR OF
MALFUNCTIONS. (MODIFIED AUTHOR ABSTRACT) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A001 008 9/2 17/2
WHARTON SCHOOL OF FINANCE AND COMMERCE PHILADELPHIA PA
DEPT OF DECISION SCIENCES (MANAGEMENT)

OPTIMAL PROGRAM AND DATA LOCATIONS IN
COMPUTER NETWORKS,

(U)

74 23P MORGAN, HOWARD LEE ILEVIN,
KATRIEL DAN ;
REPT. NO. 74-10-01
CONTRACT: N00014-67-A-0216-07

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *COMMUNICATIONS NETWORKS, *COMPUTER
PROGRAMS, *DATA STORAGE SYSTEMS, ALLOCATIONS,
NETWORK FLOWS, LINEAR PROGRAMMING, OPTIMIZATION
IDENTIFIERS: *COMPUTER NETWORKS, *FILE LOCATION
MODELS

(U)

(U)

AN OPTIMIZATION PROCEDURE FOR THE ALLOCATION OF
PROGRAM AND DATA FILES IN A COMPUTER NETWORK IS
PRESENTED. THIS ALGORITHM TAKES INTO ACCOUNT THE
DEPENDENCIES BETWEEN FILES AND PROGRAMS SUCH AS OCCUR
IN REAL HETEROGENEOUS COMPUTER NETWORKS. INSIGHTS
INTO WHETHER OR NOT TO CONVERT PROGRAMS FROM ONE
COMPUTER TO ANOTHER CAN ALSO BE GAINED FROM THE
MODEL. A SEARCH PROCEDURE FOR THE FILE LOCATION
PROBLEM IS DESCRIBED, ALONG WITH AN EXAMPLE AND A
POSSIBLE APPLICATION OF THE MODEL.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-ADD1 009 9/2 17/2
WHARTON SCHOOL OF FINANCE AND COMMERCE PHILADELPHIA PA
DEPT OF DECISION SCIENCES (MANAGEMENT)

ORGANIZING DISTRIBUTED DATA BASES IN
COMPUTER NETWORKS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
SEP 74 229P LEVIN, KATRIEL DAN ;
REPT. NO. 74-09-01
CONTRACT: N00014-67-A-0216-0007
PROJ: NR-049-272

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *COMMUNICATIONS NETWORKS, *DATA STORAGE
SYSTEMS, *COMPUTER PROGRAMMING, TIME SHARING,
ALLOCATIONS, MATHEMATICAL PROGRAMMING, NETWORK
FLOWS, MATHEMATICAL MODELS, THESES

(U)

IDENTIFIERS: ARPA COMPUTER NETWORK, *COMPUTER
NETWORKS, *FILE LOCATION MODELS

(U)

THIS RESEARCH ADDRESSED THE FILE LOCATION PROBLEM
FOR BOTH PROGRAM AND DATA SHARING. IN PARTICULAR,
DEPENDENCIES BETWEEN PROGRAMS AND DATA FILES HAVE
BEEN CONSIDERED, AS WELL AS THEIR IMPACT ON THE
OPTIMAL DISTRIBUTION OF FILES IN THE NETWORK.
HAVING REVIEWED EXISTING FILE LOCATION MODELS, A
DISTINCTION BETWEEN DATA SHARING AND PROGRAM AND DATA
SHARING WAS ESTABLISHED. SUBSEQUENTLY, THE
PROBLEMS OF CREATING AND OPERATING DISTRIBUTED DATA
BASES WERE CONSIDERED WITH BRIEF EXEMPLARY SOLUTIONS
FOR THESE PROBLEMS BEING OFFERED. A THREE
DIMENSIONAL PARTITIONING OF THE FILE LOCATION PROBLEM
WAS EMPLOYED AS THE FRAMEWORK FOR THE MAIN BODY OF
THIS RESEARCH.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A001 058 9/5 9/2 20/12
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

SURFACE STATE MEMORY IN SURFACE
ACOUSTOELECTRIC CORRELATOR.

(U)

DESCRIPTIVE NOTE: JOURNAL ARTICLE,
APR 74 4P BERS, ABRAHAM ; CAFARELLA, JOHN
H. ;

REPT. NO. JA-4377
CONTRACT: F19628-73-C-0002
PROJ: DA-7-X-263304-D-215
MONITOR: ESD TR-74-277

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN APPLIED PHYSICS LETTERS,
V25 N3 P133-135, 1 AUG 74.

SUPPLEMENTARY NOTE:

DESCRIPTORS: *MEMORY DEVICES, *CORRELATORS,
*SURFACE WAVES, TRAPS, ACOUSTIC SIGNALS,
SEMICONDUCTORS, SURFACE PROPERTIES, PROPAGATION,
TRANSDUCERS

(U)

IDENTIFIERS: *SURFACE ACOUSTOELECTRIC CORRELATORS,
*SURFACE STATE MEMORY, *ACOUSTIC SURFACE WAVE
DEVICES

(U)

WE SHOW THAT SURFACE ACOUSTIC SIGNALS CAN BE STORED
IN AND READ FROM ELECTRON TRAPS AT THE SURFACE OF A
SEMICONDUCTOR THAT IS ADJACENT TO THE PIEZOELECTRIC
ON WHICH THE SURFACE WAVE PROPAGATES. THE OBSERVED
MEMORY ACTION IS EXPLAINED BY THE LARGE-SIGNAL
DYNAMICS OF THE CHARGING AND DISCHARGING OF THE TRAPS
NEAR A SLIGHTLY DEPLETED SURFACE. THE STORAGE OF
THE SIGNAL IS ACCOMPLISHED BY CREATING A ZERO-
FREQUENCY K PATTERN WHICH FILLS THE TRAPS. THE
READING OF THE SIGNAL CAN BE DONE BY EITHER
CORRELATION OR CONVOLUTION WITH ANOTHER SURFACE
ACOUSTIC SIGNAL. THIS CORRELATION DEVICE WITH
INTERNAL MEMORY DOES NOT REQUIRE PRECISE SIGNAL
TIMING, OPERATES WITH ALL SIGNALS AT THE SAME
FREQUENCY, AND DOES NOT REQUIRE EXTERNAL TIME
INVERSION OF THE REFERENCE SIGNAL. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A001 182 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

FINDING MISTAKES IN THE OPERATION OF THE
ADDRESS TRACK OF A DIGITAL COMPUTER WITH
ONE-LEVEL PAGE MEMORY ORGANIZATION, (U)

OCT 74 15P METESHKIN, A. A. IRYABUKHA,
N. D. ITOLSTOKHATKO, V. A. ;
REPT. NO. FTD-HT-23-1776-74
PROJ: FTD-T74-05-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF PRIBORY I SISTEMY
AVTOMATIKI (USSR) N25 P129-135 1973, BY CAROL S.
NACK.

DESCRIPTORS: *MEMORY DEVICES, LOGIC DEVICES, (U)
TRANSLATIONS, USSR
IDENTIFIERS: PAGING, *COMPUTER STORAGE (U)
MANAGEMENT

THE CHARACTERISTIC FEATURES OF THE ORGANIZATION OF
THE COMPUTATIONAL PROCESS IN CONTEMPORARY TSVM'S
ARE THE DYNAMIC MEMORY DISTRIBUTIONS AND MULTIPROGRAM
MODE OF OPERATION, WHICH, AS A RULE, ASSUME PAGE
MEMORY ORGANIZATION; THE PLACEMENT OF THE PROGRAM FOR
THE SOLVED PROBLEM IN PAGES OF THE OPERATIVE MEMORY
THAT ARE FREE AT A GIVEN POINT IN TIME; AND THE
PROTECTION OF THE PROGRAM FROM THEIR MUTUAL
INFLUENCE. THE PRESENT WORK EXAMINES ONE-LEVEL
PAGE MEMORY IN WHICH THE ENTIRE MEMORY OF THE TSVM
IS DIVIDED INTO SEGMENTS OF EQUAL DIMENSIONS -
PHYSICAL PAGES, AND THE PROGRAM - INTO SEGMENTS OF
THE SAME LENGTH - MATHEMATICAL PAGES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A001 953 9/2
PRINCETON UNIV N J DEPT OF ELECTRICAL ENGINEERING

A NEW APPROACH TO THE REALIZATION OF
NONRECURSIVE DIGITAL FILTERS,

(U)

MAR 73 10P PELED, ABRAHAM ; LIU, BEDE ;
CONTRACT: AF-AFOSR-2101-71
PROJ: AF-9749
TASK: 974906
MONITOR: AFOSR TR-74-1773

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN IEEE TRANSACTIONS ON AUDIO
AND ELECTROACOUSTICS, VAU-21 N6 P477-484 DEC 73.
SUPPLEMENTARY NOTE:

DESCRIPTORS: *DIGITAL FILTERS, *RECURSIVE FILTERS,
*DATA STORAGE SYSTEMS, DELTA MODULATION, READ ONLY
MEMORIES, ANALYSIS OF VARIANCE, COMPUTERIZED
SIMULATION, ANALOG SIMULATION, ERRORS, SIGNAL TO
NOISE RATIO

(U)

IDENTIFIERS: NONRECURSIVE DIGITAL FILTERS

(U)

A NEW REALIZATION OF NONRECURSIVE DIGITAL FILTERS
THAT ARE USED TO OPERATE ON ANALOG SIGNALS IS
PROPOSED. THIS REALIZATION REQUIRES NO
MULTIPLICATIONS, AND EXPLOITS THE RELATIVE SIMPLICITY
OF DELTA MODULATION AS A MEANS FOR ANALOG TO DIGITAL
CONVERSION. THIS REALIZATION ALSO PERMITS A
MECHANIZATION AS A VERY FAST DIGITAL FILTER, USING
READ ONLY MEMORY (ROM). AN EVALUATION OF THIS
REALIZATION IN TERMS OF COMPUTATION TIME STORAGE
REQUIREMENTS AND MEAN-SQUARED ERROR IS PRESENTED.
THESE CHARACTERISTICS ARE COMPARED WITH THEIR
COUNTERPARTS FOR EXISTING REALIZATION METHODS OF
NONRECURSIVE DIGITAL FILTERS. COMPUTER SIMULATION
RESULTS THAT TEND TO CONFIRM THE THEORETICAL RESULTS
OF THE ERROR ANALYSIS ARE INCLUDED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A001 994 9/2
RAND CORP SANTA MONICA CALIF

CONTROLLED TESTS FOR PERFORMANCE EVALUATION.

(U)

JUN 73 12P LOCKETT, J. A. ; WHITE, A.
R. ;
REPT. NO. P-5028

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT AEC SCIENTIFIC
COMPUTER INFORMATION EXCHANGE MEETING ON 3-4 MAY
73.

DESCRIPTORS: *CENTRAL PROCESSING UNITS, MEMORY
DEVICES, ON LINE SYSTEMS, PERFORMANCE
IDENTIFIERS: COMPUMETRICS, IBM 360/65 COMPUTERS,
PERFORMANCE EVALUATION

(U)

(U)

HARDWARE CONFIGURATION OF A COMPUTER SYSTEM MUST BE
ACCOMPANIED BY EVALUATION OF ITS EFFECTS ON EACH
CATEGORY OF USERS TO ENSURE GOOD PERFORMANCE.
COMBINED ON-LINE/BATCH LOADS POSE A PROBLEM SINCE
SEVERAL MEASURES MUST BE EMPLOYED. ACCOUNTING DATA,
ARTIFICIAL STIMULATION, PROPER EXPERIMENTAL DESIGN
AND ADEQUATE PLANNING CAN AID ANALYSTS DERIVE
QUANTITATIVE, PROVABLE CONCLUSIONS IN THIS DIFFICULT
LOAD ENVIRONMENT.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A002 083 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATA COMPUTER PROJECT TECHNICAL REPORT. (U)

DESCRIPTIVE NOTE: FINAL REPT. 1 AUG 73-28 FEB 74.

FEB 74 101P

CONTRACT: DAHCO4-71-C-0011, ARPA ORDER-1731

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *DATA STORAGE SYSTEMS, MEMORY DEVICES,
COMMUNICATIONS NETWORKS, INFORMATION RETRIEVAL,
COMPUTER PROGRAMMING, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: *DATA COMPUTER PROJECT, COMPUTER
NETWORKS, ARPA COMPUTER NETWORK (U)

THE DATA COMPUTER SYSTEM IS BEING DESIGNED AS A
LARGE-SCALE DATA STORAGE UTILITY TO BE ACCESSED FROM
REMOTE COMPUTERS ON THE ARPANET AND, POTENTIALLY,
ON OTHER NETWORKS. THE DEVELOPMENT IS PHASED, WITH
EACH SUCCESSIVE RELEASE OF THE SYSTEM OFFERING
INCREASED CAPABILITIES TO USERS. DURING THE
PRESENT REPORTING PERIOD, THE SECOND RELEASE OF THE
SYSTEM BECAME OPERATIONAL. THIS RELEASE, WHILE
STILL PRIMITIVE IN MANY RESPECTS, IS BEGINNING TO
PROVIDE EXPERIENCE WITH ACTUAL APPLICATIONS AND USER
PROGRAMS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A002 189 9/2
RAND CORP SANTA MONICA CALIF

COMPUTERS AND SOCIETY: THE TECHNOLOGICAL
SETTING,

(U)

OCT 73 34P WARE, WILLIS H. ;
REPT. NO. P-5094

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER LOGIC, *MEMORY DEVICES,
COMPUTATIONS, FORECASTING, LOGIC CIRCUITS,
TECHNOLOGY, COST ANALYSIS

(U)

IDENTIFIERS: LOGIC DESIGN, COMPUTER STORAGE
MANAGEMENT, LARGE SCALE INTEGRATED CIRCUITS

(U)

THIS PAPER IS INTENDED TO GIVE ONLY IMPRESSIONS OF
WHERE COMPUTING TECHNOLOGY IS GOING AND TO GIVE A
FLAVOR OF WHAT IT CAN MEAN TO SOCIETY, TO VARIOUS
PROFESSIONS AND TO THE INDIVIDUAL. IT WILL
CONCENTRATE ON TWO ASPECTS: THE SO-CALLED LOGIC
TECHNOLOGY BECAUSE IT IS AN INDICATOR OF HOW FAST A
COMPUTER CAN OPERATE AND IS THEREFORE AN APPROXIMATE
MEASURE OF THE GROSS COMPUTING HORSEPOWER THAT CAN BE
BUILT; AND FILE OR STORAGE TECHNOLOGY BECAUSE IT
DETERMINES HOW MUCH DATA A COMPUTER CAN HAVE DIRECT
AND CONVENIENT ACCESS TO.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A002 481 9/2 17/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

TERMINAL INTERFACE MESSAGE PROCESSOR. THE
BBN TIP HARDWARE MANUAL.

(U)

NOV 74 106P
REPT. NO. BBN-2184
CONTRACT: DAHC15-69-C-0179, F08606-73-C-0027

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES AD-740 798.

DESCRIPTORS: *COMMUNICATIONS NETWORKS, *DATA
PROCESSING TERMINALS, *MESSAGE PROCESSING,
INTERFACES, MODEMS, MEMORY DEVICES, TIME
SHARING

(U)

IDENTIFIERS: TIP(TERMINAL INTERFACE
PROCESSOR). *TERMINAL INTERFACE PROCESSOR,
*ARPA COMPUTER NETWORK, *COMPUTER NETWORKS

(U)

THE BBN TERMINAL INTERFACE MESSAGE
PROCESSOR (TIP) PROVIDES A MEANS FOR CONNECTING
UP TO 63 TERMINAL DEVICES TO THE ARPA NETWORK.
THE TERMINAL INTERFACE SPECIFICATION CONFORMS TO
THE EIA STANDARD RS232C, WHICH PERMITS DIRECT
CONNECTION TO MOST DATA MODEMS. IN ADDITION TO
FULL DUPLEX, SERIAL DATA TRANSMISSION, EACH OF THE 64
PORTS PROVIDES 4 PROGRAM-SETTABLE CONTROL LINES AND
MONITORS 6 EXTERNAL STATUS LINES; THESE LINES ARE
USEFUL IN DEALING WITH MODEMS OR OTHER COMPATIBLE
I/O DEVICES. DATA FORMAT IS TELETYPE
COMPATIBLE, THAT IS, CHARACTER ORIENTED WITH START
AND STOP BITS. THE TIP HANDLES ALL ROUTINE
OPERATIONS OF TIMING AND SEQUENCING. ALL LINE
PARAMETERS, SUCH AS SPEED AND CHARACTER SIZE, ARE
PROGRAM SETTABLE.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A002 694 9/2
GENERAL ELECTRIC CORPORATE RESEARCH AND DEVELOPMENT
SCHENECTADY N Y

DESIGN, FABRICATION, AND EVALUATION OF AN
ELECTRON BEAM ADDRESSABLE HIGH INFORMATION
DENSITY MEMORY TUBE.

(U)

DESCRIPTIVE NOTE: REPT. NO. 8 (FINAL), 1 FEB 72-30
APR 74,

OCT 74 104P LEMMOND, CHARLES Q. HUGHES,
WILLIAM C. POSSIN, GEORGE E. WILSON, RONALD
H. FISHER, JAMES K. I

REPT. NO. GE-SRD-74-117

CONTRACT: DAAB07-72-C-0098

PROJ: DA-1-H-631024-D-252

TASK: 1-H-631024-D-25203

MONITOR: ECOM 0098-72-F

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *MEMORY DEVICES, *STORAGE TUBES,
*RANDOM ACCESS COMPUTER STORAGE, ELECTRON OPTICS,
WAVEFORMS, FABRICATION, PERFORMANCE
IDENTIFIERS: DESIGN

(U)

(U)

DURING THIS CONTRACT TWO DIFFERENT ELECTRON BEAM
MEMORY TUBE DESIGNS WERE CONSTRUCTED. TUBES OF THE
PHASE I AND PHASE II DESIGNS WERE
SUCCESSFULLY OPERATED IN A DIGITAL MEMORY SYSTEM.
TUBE OPERATION AT A 10 MBIT RATE WAS THE ONLY
CONTRACT GOAL NOT DEMONSTRATED. ELECTRONIC CIRCUIT
TEST EQUIPMENT DESIGN LIMITED WRITE/READ RATES TO 5
MBITS/SEC. WITH THE DISTRIBUTION OF THIS REPORT,
AND THE DELIVERY OF ONE PHASE II BEAMOS TUBE TO
THE U.S. ARMY ELECTRONICS COMMAND, THE
CONTRACT WILL BE COMPLETE.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A002 810 9/2

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

EXCHANGE CIRCUITS BETWEEN BRANCHES OF
PARALLEL ALGORITHMS,

(U)

DEC 74 12P KOSAREV, YU. G. I

REPT. NO. FTD-HT-23-249-75

PROJ: FTD-T74-05-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF VYCHISLITELNYE
SISTEMY (USSR) N51 P70-75 1972, BY DALE A. BOSTAD.

DESCRIPTORS: •PARALLEL PROCESSORS, •LOGIC CIRCUITS,
COMPUTATIONS, TRANSLATIONS, USSR

(U)

EXCHANGE CIRCUITS BETWEEN BRANCHES OF PARALLEL
ALGORITHMS--TRANSLATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A002 835 17/2 9/2
NORTH ELECTRIC CO GALION OHIO GOVERNMENT PRODUCTS DIV

COMMUNICATIONS PROCESSOR SYSTEM (CPS)
MODELING APPROACH.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. OCT 73-AUG 74,
NOV 74 59P MONROE, MARVIN ;
CONTRACT: F30602-73-C-0314
MONITOR: RADC TR-74-290

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *COMMUNICATION EQUIPMENT, *DATA
PROCESSING, SIGNAL PROCESSING, MESSAGE PROCESSING,
MEMORY DEVICES, TIME SHARING, SWITCHING CIRCUITS,
MATHEMATICAL MODELS

(U)

IDENTIFIERS: COMMUNICATIONS PROCESSOR SYSTEM

(U)

THE PURPOSE OF THE COMMUNICATIONS PROCESSOR
SYSTEM STUDY IS TO DEVELOP A FAMILY OF COMMON
COMPUTER PROCESSOR MODULES SUITED TO FUTURE MILITARY
REQUIREMENTS OF MULTI-PURPOSE SWITCHING, INCLUDING
DATA AND VOICE. ONE TASK IN THIS STUDY IS TO
VERIFY THE DESIGN OF A PROCESSOR BY COMPUTER
MODELING. THIS REPORT PRESENTS A DISCUSSION OF THE
REQUIREMENTS OF AN ADEQUATE MODEL, DESCRIBES THE
TECHNIQUES CHOSEN TO FULFILL THE STUDY OBJECTIVES,
AND STATES THE PLANS REGARDING THE EXTENT TO WHICH
THESE TECHNIQUES WILL BE APPLIED DURING THIS
STUDY.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A002 849 20/6 14/5 9/2
HARRIS CORP MELBOURNE FLA ELECTRONIC SYSTEMS DIV

REAL TIME HOLOGRAPHIC RECORDING
MATERIALS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 OCT 73-30 JUN 74,
NOV 74 290P ZECH, R. G. ;RALSTON, LYNDIA
M. ;SHARECK, M. W. ;
CONTRACT: F30602-74-C-0030
MONITOR: RADC TR-74-287

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *DATA STORAGE SYSTEMS, *OPTICAL
MATERIALS, *MICROFILM, HOLOGRAPHY, OPTICAL
EQUIPMENT, PHOTOGRAPHIC RECORDING SYSTEMS,
PHOTOGRAPHIC RECORDING MEDIA, OPTICAL PROPERTIES,
PERFORMANCE(ENGINEERING), PHOTOGRAPHIC FILM
IDENTIFIERS: *HOLOGRAPHIC INFORMATION STORAGE,
*OPTICAL DATA PROCESSING

(U)

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A NUMBER OF HIGH-QUALITY, DRY-WORKING RECORDING
MATERIALS WERE EVALUATED TO DETERMINE THEIR
SUITABILITY FOR HOLOGRAPHIC DATA STORAGE AND OPTICAL
DATA PROCESSING APPLICATIONS. SENSITOMETRIC,
HOLOGRAPHIC, AND SYSTEMS DATA WERE GENERATED. WITH
THE RADC-SPONSORED HRMR SYSTEM A FRAME OF
REFERENCE, SEVERAL FILM/SYSTEMS STUDIES WERE
COMPLETED THAT HAVE AN IMPORTANT PRACTICAL IMPACT.
IN PARTICULAR, THE FEASIBILITY OF MAKING HIGH-
QUALITY FICHE REPLICATIONS USING STRAIGHTFORWARD
CONTACT COPYING TECHNIQUES WAS DEMONSTRATED. THE
OVERALL CONCLUSION OF THE STUDY WAS THAT SOME DRY-
WORKING RECORDING MATERIALS COULD BECOME SYSTEMS
QUALIFIED IN THE NEAR-TERM.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A002 980 9/2
NAVAL ORDNANCE LAB WHITE OAK MD

PROGRESS TOWARD THE CROSSTIE MEMORY.
II.

(U)

DESCRIPTIVE NOTE: ANNUAL REPT. NO. 2,
OCT 74 43P SCHWEE, L. J. ; IRONS, H.
R. ; ANDERSON, W. E. ; SERY, R. S. ;
SCHARNHORST, K. P. ;
REPT. NO. NOLTR-74-176
PROJ: A310-310B/WR02-103, NOL-0824/RR011-02
TASK: A310-310B/WR02-103-001, NOL-0824/RR011-02-02

UNCLASSIFIED REPORT

DESCRIPTORS: *THIN FILM STORAGE DEVICES, *RANDOM
ACCESS COMPUTER STORAGE, SHIFT REGISTERS,
MICROCIRCUITS, MAGNETIC DOMAINS, DOMAIN WALLS,
OPTICAL WAVEGUIDES, KERR MAGNETOOPTICAL EFFECT (U)
IDENTIFIERS: BORAM (BLOCK ORIENTED RANDOM
ACCESS MEMORIES), BLOCK ORIENTED RANDOM ACCESS
MEMORIES, MAGNETIC FILM MEMORIES,
MAGNETORESISTIVITY, MAGNETIC BUBBLE DOMAINS (U)

THE CROSSTIE MEMORY IS INTENDED FOR USE AS A BLOCK
ORIENTED RANDOM ACCESS MEMORY (BORAM) OR FAST
AUXILIARY MEMORY (FAM). THE ADVANTAGES OF THE
CROSSTIE MEMORY ARE SPEED, LOW POWER, HIGH BIT
DENSITY, NONVOLATILITY, A WIDE TEMPERATURE RANGE OF
OPERATION, LOW COST, AND AVAILABLE TECHNOLOGY. THIS
REPORT CONTAINS INFORMATION ON WALL PLACEMENT
TECHNIQUES, DYNAMIC NUCLEATION THRESHOLDS,
PROPAGATION, MICROCIRCUITRY, DOMAIN WALL OBSERVATION,
AND DETECTION. MICROCIRCUITRY FOR SHIFTING DATA
HAS BEEN DEVELOPED AND TESTED FOR 32-BIT EXPERIMENTAL
SHIFT REGISTERS. THE INFORMATION IS OBSERVED USING
THE MAGNETOOPTIC KERR EFFECT. DETECTION IS
CONSIDERED FEASIBLE USING EITHER MAGNETORESISTANCE OR
GUIDED WAVE OPTICS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A003 022 9/2 12/1
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

CONSTRUCTION OF GENERALIZED LOGICAL MODEL OF
AUTOMATS WITH MEMORY,

(U)

NOV 74 18P KAZNACHEEV, V. I. ; MURAVYEV,
N. P. ;
REPT. NO. FTD-HC-23-2870-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO.
VYCHISLITELNAYA TEKHNIKA V MASHINOSTROENII, MINSK,
1970 P23-30.

DESCRIPTORS: *MEMORY DEVICES, *MATHEMATICAL LOGIC,
BOOLEAN ALGEBRA, LOGIC DEVICES, TRANSLATIONS,
USSR

(U)

IDENTIFIERS: AUTOMATA THEORY

(U)

AN ANALYTICAL METHOD OF CONSTRUCTING A GENERALIZED
LOGICAL MODEL (M-K) OF POLAR SYNCHRONIC AND
ASYNCHRONIC AUTOMATS WITH MEMORY IS PRESENTED. THE
POSSIBILITIES OF USING IT DURING THE CONSTRUCTION OF
TESTS, PROCEDURES OF CONTROL AND FOR THE DIAGNOSIS OF
INACCURACIES ARE ALSO EXAMINED. A METHOD OF
SOLVING THESE PROBLEMS WITH THE HELP OF GENERALIZED
LOGIC MODEL IS DESCRIBED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A003 253 9/2

INTEGRATED SYSTEMS SUPPORT INC FALLS CHURCH VA

MULTICOMMAND NETWORKS PROJECTS FOR THE U.S.
ARMY COMPUTER SYSTEMS COMMAND. VOLUME I.
SURVEY PLAN FOR SELECTED ARMY DATA
PROCESSING INSTALLATIONS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

DEC 74 117P

CONTRACT: DAAK02-72-D-0529

PROJ: DA-SX-865803-MY-10

TASK: SX-865803-MY-1003

MONITOR: USACSC AT-74-06-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *DATA
PROCESSING, ARMY OPERATIONS, ARMY EQUIPMENT, ARMY
TRAINING, COMPUTER APPLICATIONS, COST ANALYSIS,
MEMORY DEVICES, LOGISTICS SUPPORT, MANAGEMENT
INFORMATION SYSTEMS

(U)

IDENTIFIERS: PERFORMANCE EVALUATION

(U)

THE PURPOSE OF THIS THREE-VOLUME REPORT IS TO
GENERATE MEDIUM AND LONG-RANGE SOLUTIONS TO THE
PROBLEM OF OVERLOADING DATA PROCESSING INSTALLATIONS
THAT ARE PROVIDING SERVICES TO THE INSTALLATION
STAFFS AND OTHER SUPPORTED ACTIVITIES. VOLUME I
DEFINES THE DATA REQUIRED TO SUPPORT ANALYSIS,
SIMULATION, AND CONFIGURATION DESIGN. IT PROVIDES
FOR THE ORGANIZATION, TOOLS, SCHEDULE, AND PROCEDURES
NECESSARY TO COLLECT, CORRELATE, ANALYZE AND USE THE
REQUIRED DATA.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A003 414 9/2
MITRE CORP BEDFORD MASS

EXPERIENCES WITH AN OPERATIONAL ASSOCIATIVE
PROCESSOR.

(U)

NOV 74 37P BALDAUF, D. L. ;
REPT. NO. MTR-2879
CONTRACT: F19628-73-C-0001
MONITOR: ESD TR-74-199

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *ASSOCIATIVE PROCESSING, *PARALLEL
PROCESSING, MEMORY DEVICES, INTERFACES,
COMPUTATIONS, MATHEMATICAL LOGIC, COMPUTER
PROGRAMMING, SPACE SURVEILLANCE SYSTEMS
IDENTIFIERS: STARAN SYSTEM

(U)

(U)

A SPACE OBJECT POSITION PREDICTION PROGRAM WAS
IMPLEMENTED ON THE STARAN ASSOCIATIVE ARRAY
PROCESSOR (AP) INSTALLED AT THE ROME AIR
DEVELOPMENT CENTER (RADC), NEW YORK.
THIS DOCUMENT OUTLINES THE EXPERIENCE GAINED FROM
THIS TASK. A SECTION IS DEVOTED TO AN ANALYSIS OF
THE TIME AND EFFORT REQUIRED TO IMPLEMENT THE
PROGRAM. EMPHASIS IS GIVEN TO THE PROGRAM DESIGN
AND ARRAY LAYOUT PHASE. SYSTEMATIC (I.E.,
INDEPENDENT OF THE SPECIFIC PROGRAM) AND
APPLICATION-RELATED CAPABILITIES AND LIMITATIONS ARE
DISCUSSED. AN ANALYSIS OF THE RADCAP SYSTEM FROM
A USER'S VIEWPOINT IS ALSO PRESENTED. THE LATTER
PART OF THE PAPER DEALS WITH RECOMMENDATIONS FOR AN
APPROVED STARAN SYSTEM (HARDWARE AND SOFTWARE)
AND AN IMPROVED HOST COMPUTER INTERFACE.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A003 715 9/2
MICHIGAN UNIV ANN ARBOR DEPT OF INDUSTRIAL AND OPERATIONS
ENGINEERING

A DATA DESCRIPTION LANGUAGE APPROACH TO
FILE TRANSLATION, (U)

MAR 74 19P MERTEN, ALAN G. ; FRY, JAMES
P. ;
REPT. NO. ISDOS-WORKING PAPER-93, DATA TRANS-WORKING
PAPER-304
CONTRACT: DCA100-72-C-0019, AF-AFOSR-2219-72
PROJ: AF-9769
TASK: 976902
MONITOR: AFOSR TR-75-0038

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA STORAGE SYSTEMS, *TRANSLATORS,
DATA MANAGEMENT, COMPUTER PROGRAMMING (U)
IDENTIFIERS: *DATA TRANSLATION (U)

DATA TRANSLATION IS THE PROCESS WHEREBY
INFORMATION (DATA) STORED BY ONE COMPUTER ON
FILES IN SOME PARTICULAR STRUCTURE MAY BE TRANSFORMED
SO THAT THEY COULD BE READ BY ANOTHER COMPUTER
(POSSIBLY MANUFACTURED BY ANOTHER SUPPLIER, AND
HENCE, NORMALLY INCOMPATIBLE) ACCORDING TO SOME
OTHER FILE STRUCTURE. THE OVERALL RESEARCH GOAL IS
TO DEVELOP A GENERALIZED METHODOLOGY FOR DATA
TRANSLATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A003 737 9/2
MICHIGAN UNIV ANN ARBOR DEPT OF INDUSTRIAL AND OPERATIONS
ENGINEERING

ON THE IMPLEMENTATION OF A PHYSICAL DATA
MODEL FOR TRANSLATION.

(U)

MAY 74 25P FRY, JAMES P. ;
REPT. NO. DATA TRANS-WORKING PAPER-6.05
CONTRACT: AF-AFOSR-2219-72
PROJ: AF-9769
TASK: 976902
MONITOR: AFOSR TR-75-0036

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA STORAGE SYSTEMS, *TRANSLATORS,
COMPUTER PROGRAMMING, MATHEMATICAL LOGIC
IDENTIFIERS: *DATA TRANSLATION

(U)

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THE CENTRAL THESIS OF THIS PAPER IS THE DEVELOPMENT
OF A PHYSICAL MODEL FOR STORED-DATA. TO THIS END,
THE PAPER REPORTS ON THE IMPLEMENTATION OF A PHYSICAL
DATA MODEL FOR THE UNIVERSITY OF MICHIGAN DATA
TRANSLATOR. FIRST, THE EVOLUTION OF DATA MODELS
FOR TRANSLATION IS TRACED AND THE RELEVANT LITERATURE
IS REVIEWED. IN SECTION 3 THE MODEL IS DESCRIBED
USING A TOP-DOWN METHODOLOGY. THE BASIC DESIGN
CONSIDERATIONS ARE REVIEWED AND THE IMPLEMENTATION
DETAILS PRESENTED. THIS SECTION ALSO DESCRIBES THE
UTILIZATION OF THE MODEL IN THE TRANSLATION PROCESS.
SECTION 4 CONCLUDES THE PAPER BY PRESENTING SOME
OBSERVATIONS ON THE IMPLEMENTATION OF PHYSICAL DATA
MODELS FOR DATA TRANSLATION.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A003 987 9/2
PRINCETON UNIV N J DEPT OF ELECTRICAL ENGINEERING

SOME NEW REALIZATIONS OF DEDICATED HARDWARE
DIGITAL SIGNAL PROCESSORS.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
OCT 74 7P PELED, A. ILIU, B. ;
CONTRACT: AF-AFOSR-2101-71, NSF-GK-24187
PROJ: AF-9749
TASK: 974906
MONITOR: AFOSR TR-74-1898

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH IBM
THOMAS J. WATSON RESEARCH CENTER, YORKTOWN
HEIGHTS, N.Y. PUB. IN PROCEEDINGS OF IEEE
ELECTRONICS AND AEROSPACE SYSTEMS CONVENTION
(EASCON) RECORD, WASHINGTON, D.C., OCT 74, P464-
468 OCT 74.

DESCRIPTORS: *SIGNAL PROCESSING, *DIGITAL FILTERS,
FOURIER TRANSFORMATION, MEMORY DEVICES,
SEMICONDUCTOR DEVICES (U)
IDENTIFIERS: *FAST FOURIER TRANSFORM,
SEMICONDUCTOR COMPUTER STORAGE (U)

THE SIGNIFICANT BREAKTHROUGHS IN THE AREA OF
SEMICONDUCTOR TECHNOLOGY HAVE OPENED UP NEW OPTIONS
FOR THE IMPLEMENTATION OF DIGITAL SIGNAL PROCESSORS.
THE AUTHORS SUGGEST SOME NEW HARDWARE REALIZATIONS
OF SUCH DEDICATED PROCESSORS THAT CAPITALIZE ON THE
ADVANCES IN SEMICONDUCTOR MEMORY TECHNOLOGY TO
PRODUCE REALIZATIONS THAT HAVE A SIGNIFICANTLY LOWER
PACKAGE COUNT AND POWER CONSUMPTION AND ALSO MAKE
POSSIBLE HIGHER SPEEDS OF OPERATION. THE AUTHORS
SPECIFICALLY DISCUSS THE REALIZATION OF DIGITAL
FILTERS AND HIGH SPEED FAST FOURIER
TRANSFORMERS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A004 180 9/2
NAVAL RESEARCH LAB WASHINGTON D C

A FORTRAN SUBROUTINE FOR UNPACKING AND
PACKING BINARY DATA.

(U)

DESCRIPTIVE NOTE: MEMORANDUM REPT.,
DEC 74 14P PHILLIPS, GARY W. ;
REPT. NO. NRL-MR-2951, NRL-COMPUTER BULL-41
PROJ: NRL-66H01-48

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMS, *DATA STORAGE
SYSTEMS, DATA PROCESSING, FORTRAN

(U)

IDENTIFIERS: PACKING(DATA),
UNPACKING(DATA)

(U)

THIS IS A GENERAL PURPOSE ROUTINE TO UNPACK DATA
STORED IN CORE IN PACKED BINARY FORMAT OR TO PACK
BINARY DATA STORED WORD FOR WORD IN AN ARRAY. THE
DATA MUST BE STORED IN BYTES WHICH ARE A MULTIPLE OF
THREE BITS IN LENGTH WITH A MINIMUM LENGTH OF 3 BITS
AND A MAXIMUM OF 48 BITS. IT IS USEFUL FOR
UNPACKING DATA READ IN PACKED BINARY FORM AND SORTING
IT INTO AN ARRAY SO AS TO BE CONVENIENT FOR FURTHER
PROCESSING BY A FORTRAN PROGRAM, OR FOR PREPARING
DATA FROM AN ARRAY FOR WRITING OUT IN A COMPACT FORM,
OR POSSIBLY FOR INTERMEDIATE STORAGE OF LARGE ARRAYS
DURING EXECUTION OF A PROGRAM IN ORDER TO SAVE CORE
SPACE.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A004 331 9/2 6/4
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER
SCIENCE

A MEMORY-PROCESS MODEL OF SYMBOLIC
ASSIMILATION.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
APR 74 291P MANN, WILLIAM C. I
CONTRACT: F44620-73-C-0074, DARPA ORDER-2466
MONITOR: AFOSR TR-75-0132

UNCLASSIFIED REPORT

DESCRIPTORS: *ASSIMILATION, *COMPUTER APPLICATIONS,
*ARTIFICIAL INTELLIGENCE, PROBLEM SOLVING,
INFORMATION PROCESSING, MEMORY DEVICES, HEURISTIC
METHODS, THESES

(U)

IDENTIFIERS: DIRECTED GRAPHS, GRAPH THEORY,
SLATE SYSTEM, SELF ORGANIZING SYSTEMS, SYMBOLIC
PROGRAMMING

(U)

THE REPORT DESCRIBES RESEARCH ON PROBLEMS OF USING
KNOWLEDGE TO MAKE AVAILABLE INFORMATION USEFUL, WHICH
IS CALLED 'ASSIMILATION' PROBLEMS. THE RESULTING
THEORY CONTRIBUTES TO PSYCHOLOGY AS A MODEL OF HUMAN
SHORT TERM MEMORY, AND TO INFORMATION SCIENCE AS AN
EFFECTIVE COLLECTION OF NEW GENERAL METHODS. THE
VEHICLE FOR STUDY IS A COMPUTER PROGRAM, CALLED THE
SLATE SYSTEM, WHICH MANIPULATES KNOWLEDGE AND
EXPERIENCE REPRESENTED AS LABELED DIRECTED GRAPHS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A004 382 9/2 8/2
PRC INFORMATION SCIENCES CO MCLEAN VA

CARTOGRAPHIC DATA BASE HIERARCHY. VOLUME
1. SYSTEMS ANALYSIS AND DESIGN.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUN 72-AUG 73,
SEP 74 87P ALVAREZ, DONALD T. ; TAYLOR,
M. LYNN ;
REPT. NO. PRC-R-1690-VOL-1
CONTRACT: F30602-72-C-0457
MONITOR: RADC TR-74-228-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2. AD/A-004
383.

DESCRIPTORS: *MAPPING, *DATA STORAGE SYSTEMS, DATA
BASES, DATA PROCESSING, SYSTEMS ANALYSIS, COMPUTER
PROGRAMMING, EXPERIMENTAL DESIGN, INFORMATION
RETRIEVAL

(U)

IDENTIFIERS: HIS 635 COMPUTERS, COBOL

(U)

THE OBJECTIVE OF THE CARTOGRAPHIC DATA BASE
HIERARCHY PROJECT WAS TO ANALYZE, DESIGN,
IMPLEMENT, AND TEST AN EXPERIMENTAL DATA BASE SYSTEM
WHICH EMPLOYS A HIERARCHICAL ENCODING SCHEME.
HIGHLIGHTS OF THE IMPLEMENTED SYSTEM INCLUDE THE
FOLLOWING. DESIGN IS BASED ON A GENERALIZED
FEATURE CLASSIFICATION SYSTEM WHICH ALLOWS FOR
DETAILED DESCRIPTION OF CARTOGRAPHIC FEATURES. THE
CLASSIFICATION SYSTEM IS COMPOSED OF FEATURE CLASSES,
TYPES, SUB-TYPES, EIGHT SPECIAL DESCRIPTORS, SPECIAL
NUMERIC, FEATURE NAME, FREE TEXT COMMENT, AND
REFERENCES TO SOURCE MATERIALS. IMPLEMENTATION,
FOR EXPERIMENTAL PURPOSES, IS ON THE HONEYWELL 635
COMPUTER SYSTEM USING INTEGRATED DATA STORE
(IDS) FOR DATA MANAGEMENT SERVICES, AND IS WRITTEN
IN THE COBOL LANGUAGE. FUNCTIONAL CAPABILITIES
INCLUDE LOADING, RETRIEVAL, REMOTE QUERY, DELETION,
AND MODIFICATION. REMOTE QUERY CAPABILITY ALLOWS A
USER TO INTERACTIVELY COMMUNICATE WITH THE CDB
THROUGH A REMOTE TERMINAL FOR PURPOSES OF ACCESSING
AND RETRIEVING CARTOGRAPHIC INFORMATION.
HIERARCHICAL DATA STRUCTURE WHICH PROVIDES FOR
FOUR GEOGRAPHIC SEGMENTATION LEVELS, TWO LEVELS OF
FEATURE SEGMENTATION, AND TWO LEVELS OF FEATURE
DESCRIPTION (I.E., SUBJECTIVE AND LOCATIONAL).
STORAGE OF GEOGRAPHIC COORDINATE STRINGS IN A
COMPACT INCREMENTAL FORMAT ALLOWING FOR VARIABLE DATA
RESOLUTIONS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A004 383 9/2 8/2
PRC INFORMATION SCIENCES CO MCLEAN VA

CARTOGRAPHIC DATA BASE HIERARCHY. VOLUME
II. SYSTEM IMPLEMENTATION AND TESTING.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUN 72-AUG 73,
SEP 74 152P ALVAREZ, DONALD T. ; TAYLOR,
M. LYNN ; VIRKLER, GARY W. ;
REPT. NO. PRC-R-1690-VOL-2
CONTRACT: F30602-72-C-0457
MONITOR: RADC TR-74-228-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD/A-004 382,
AND VOLUME 3, AD/A-004 384.

DESCRIPTORS: *MAPPING, *DATA STORAGE SYSTEMS, DATA
BASES, DATA PROCESSING, SYSTEMS ANALYSIS, COMPUTER
PROGRAMMING, EXPERIMENTAL DESIGN, INFORMATION
RETRIEVAL, MEMORY DEVICES, TEST METHODS
IDENTIFIERS: HIS 635 COMPUTER, COBOL

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THE PURPOSE OF FINAL TECHNICAL REPORT,
VOLUME II, IS TO DESCRIBE THE DATA BASE SYSTEM
IMPLEMENTED, INCLUDING: DATA HIERARCHY AND RECORD
STRUCTURE, DATA BASE CONTENTS, HARDWARE SYSTEM USED,
SOFTWARE MODULES DEVELOPED, DIRECTIONS FOR SYSTEM
USERS, AND SUMMARY RESULTS OF SYSTEM TESTING.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A004 384 9/2 8/2
PRC INFORMATION SCIENCES CO MCLEAN VA

CARTOGRAPHIC DATA BASE HIERARCHY. VOLUME
III. PROGRAM DOCUMENTATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUN 72-AUG 73,
SEP 74 123P ALVAREZ, DONALD T. ; TAYLOR,
M. LYNN ; VIRKLER, GARY W. ;
REPT. NO. PRC-R-1690-VOL-3
CONTRACT: F30602-72-C-0457
MONITOR: RADC TR-74-228-VOL-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD/A-004
383.

DESCRIPTORS: *MAPPING, *DATA STORAGE SYSTEMS, DATA
BASES, DATA PROCESSING, SYSTEMS ANALYSIS, COMPUTER
PROGRAMMING, EXPERIMENTAL DESIGN, INFORMATION
RETRIEVAL

(U)

IDENTIFIERS: HIS 635 COMPUTERS, COBOL

(U)

THE PURPOSE OF FINAL TECHNICAL REPORT,
VOLUME III, IS TO PRESENT THE EXPERIMENTAL CDB
SOFTWARE OPERATING ENVIRONMENT AND PROGRAM
DOCUMENTATION. SECTION II OF THIS VOLUME
DESCRIBES THE OPERATIONAL ENVIRONMENT OF THE CDB
SYSTEM INCLUDING THE SOFTWARE CONFIGURATION, COMMON
DATA AREA FORMATS, AND FILE FORMATS. SECTION III
PRESENTS THE PROGRAM DESCRIPTIONS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A004 425 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

METHOD OF POSITION INPUT INTO A COMPUTER OF
INFORMATION ABOUT A MACHINE-BUILDING PART, (U)

DEC 74 24P PODYAKOV, B. A. ;
REPT. NO. FTD-HC-23-2885-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MONO.
VYCHISLITELNAYA TEKHNICA V MASHINOSTROENII, MINSK,
DEC 70 P141-152.

DESCRIPTORS: *COMPUTER GRAPHICS, CODING,
INFORMATION PROCESSING, MEMORY DEVICES, LOGIC
DEVICES, TRANSLATIONS, USSR (U)
IDENTIFIERS: COMPUTER AIDED DESIGN (U)

METHOD OF POSITION INPUT INTO A COMPUTER OF
INFORMATION ABOUT A MACHINE-BUILDING PART--
TRANSLATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A005 692 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER
SCIENCE

THE OPTIMAL SELECTION OF SECONDARY INDICES
FOR FILES.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
NOV 74 19P SCHKOLNICK, MARIO ;
CONTRACT: F44620-73-C-0074, ARPA ORDER-2466
MONITOR: AFOSR TR-75-0196

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA STORAGE SYSTEMS, DATA MANAGEMENT,
INFORMATION RETRIEVAL, STATISTICAL ANALYSIS,
MATHEMATICAL LOGIC, ALGORITHMS
IDENTIFIERS: *COMPUTER STORAGE MANAGEMENT

(U)

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THE AUTHOR CONSIDERS THE PROBLEM OF FINDING AN
OPTIMAL SET OF INDICES FOR A FILE. A GENERAL MODEL
FOR A FILE IS ASSUMED TOGETHER WITH A PROBABILISTIC
MODEL OF THE TRANSACTIONS CONDUCTED WITH IT;
QUERIES, UPDATES, INSERTIONS AND DELETIONS.
IT IS SHOWN THAT ALL THE INFORMATION ASSUMED FOR
EACH ATTRIBUTE CAN BE CONDENSED INTO TWO PARAMETERS
AND THAT PROPERTIES OF THE OPTIMAL SOLUTION CAN BE
DERIVED FROM THIS CONDENSED INFORMATION. AN
ALGORITHM TO FIND THE OPTIMAL SET OF INDICES BASED ON
THESE PROPERTIES IS EXHIBITED.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A006 119 9/2
JOHNS HOPKINS UNIV SILVER SPRING MD APPLIED PHYSICS
LAB

USE OF A MICROPROCESSOR IN A SUPERVISORY
CONTROL APPLICATION.

(U)

DESCRIPTIVE NOTE: TECHNICAL MEMO.,
DEC 74 35P BINCK, H. J. ZOUCK, J. H.

REPT. NO. APL-TG-1269
CONTRACT: N00017-72-C-4401

UNCLASSIFIED REPORT

DESCRIPTORS: *CENTRAL PROCESSING UNITS,
*MICROCOMPUTERS, COMPUTER PROGRAMMING, INTEGRATED
CIRCUITS, MEMORY DEVICES, LOGIC DEVICES,
DEBUGGING(COMPUTERS), INTERFACES, CONTROL
SYSTEMS, READ ONLY MEMORIES

(U)

IDENTIFIERS: LARGE SCALE INTEGRATED CIRCUITS

(U)

THIS REPORT DESCRIBES THE SOLUTION OF A PROPULSION
TEST CONTROL PROBLEM BY IMPLEMENTING SUPERVISORY
CONTROL WITH AN LSI (LARGE-SCALE INTEGRATION)
MICROPROCESSOR SYSTEM. A BRIEF DESCRIPTION OF THE
CONTROL PROBLEM AND THE TEST IS PROVIDED. PRIMARY
EMPHASIS IS ON THE SPECIFIC SOLUTION CHOSEN USING THE
MICROPROCESSOR. THE PAPER DISCUSSES PROGRAMMING IN
THE MICROPROCESSOR, THE TYPE OF MEMORY USED, AND HOW
THE MEMORY WAS IMPLEMENTED. THE DESIGN GOALS THAT
LED TO THE FINAL CONFIGURATION ARE ALSO DISCUSSED.
THE REASONS FOR USING THE LSI MICROPROCESSOR ARE
PRESENTED, TOGETHER WITH ITS LIMITATIONS AND
ADVANTAGES. USE OF A MICROPROCESSOR IN THIS
APPLICATION REDUCED HARDWARE COSTS SIGNIFICANTLY.
PROGRAMS WERE WRITTEN IN THE MICRO PROCESSOR'S
ASSEMBLY LANGUAGE, CROSS-ASSEMBLED ON ANOTHER
COMPUTER, AND THEN BURNED INTO PROGRAMMABLE READ-ONLY
MEMORIES. HARDWARE THAT AIDED IN THE PROGRAMMING
AND DEBUGGING IS ALSO DESCRIBED.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A006 649 9/2
NAVAL RESEARCH LAB WASHINGTON D C

MICROPROGRAMMED BENCHMARKS FOR THE
MICROPROGRAMMED CONTROL UNIT OF THE AN/UYK-
17(XB-1)(V) SIGNAL PROCESSING ELEMENT.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
JAN 75 154P ELOVITZ, HONEY SUE ;
REPT. NO. NRL-7832
PROJ: NRL-B02-06, WF21-241
TASK: WF21-241-601

UNCLASSIFIED REPORT

DESCRIPTORS: *MICROPROGRAMMING, *SIGNAL PROCESSING,
MEMORY DEVICES, ARITHMETIC UNITS, SHIFT REGISTERS,
COMPUTATIONS, COMPUTER PROGRAMMING (U)
IDENTIFIERS: AN/UYK-17(XB-1)(V) (U)

THE AN/UYK-17(XB-1)(V) SIGNAL
PROCESSING ELEMENT USES A MICROPROGRAMMED
CONTROL UNIT (MCU) TO CONTROL THE OTHER
COMPONENTS OF THE SIGNAL PROCESSING ELEMENT, TO
FORMAT DATA FOR THESE OTHER COMPONENTS, AND TO
PERFORM SIMPLE ARITHMETIC CALCULATIONS. FOURTEEN
BENCHMARK PROGRAMS WERE WRITTEN FOR AN EARLY MODEL OF
THE MCU AND RUN ON A SIMULATOR. AS A RESULT OF
CODING AND EXECUTING THESE PROGRAMS, SEVERAL CHANGES
WERE MADE IN THE MCU AND SELECTOR CHANNEL
CONTROLLER (SCC) DESIGNS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A006 798 9/2
AIR FORCE FLIGHT TEST CENTER EDWARDS AFB CALIF

A TRANSPOSITION ALGORITHM FOR DIGITAL DATA
COMPRESSION KEYS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
SEP 74 21P BERRA, FRED N. ;
REPT. NO. AFFTC-TD-74-2

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA STORAGE SYSTEMS, *DATA
COMPRESSION, DATA PROCESSING, COMPUTATIONS,
ALGORITHMS

(U)

IDENTIFIERS: DATA KEY TRANSPOSITION

(U)

A KEY TRANSPOSITION ALGORITHM, A PROCEDURE BY WHICH
COMPUTER WORDS ARE TRANSFORMED INTO ENTITIES THAT ARE
USED TO STORE AND RETRIEVE TABLE INFORMATION WITH
GREAT EFFICIENCY, IS USEFUL IN MANY AREAS OF COMPUTER
INFORMATION RETRIEVAL. A SPECIFIC KEY
TRANSPOSITION ALGORITHM IS PRESENTED WHICH APPLIES TO
A SET OF DIGITAL DATA COMPRESSION KEY INTEGERS OVER
THE RANGE OF $1 < OR = K < OR = N$. THIS SET IS
NON-CONTINUOUS AND NON-UNIFORM, BUT HAS DEFINABLE
SUBSETS (RANGING OVER $K \text{ SUB } I < OR = K < OR = K$
 $\text{SUB } J$) WHICH ARE SEQUENTIALLY UNIFORM. THE
ALGORITHM OPERATES FROM DENSELY STORED TABLES AND
PERFORMS MOST ENTRIES TO OBTAIN TABLE INFORMATION
WITH A DIVIDE AND ADD OPERATION. A MINIMUM
CONTROLLED SCAN IS USED TO RETRIEVE THE INFORMATION
ONLY WHEN A TRANSITION OCCURS BETWEEN ONE SUBRANGE
AND ANOTHER. THE NUMBER OF SCANNED KEY INTEGERS IS
USUALLY VERY SMALL. SOME TIMING COMPARISONS WITH A
LOGARITHMIC SEARCH ARE PRESENTED SHOWING FROM 30 TO
40 PERCENT IMPROVEMENTS DEPENDING ON THE DIGITAL DATA
COMPRESSION KEY STRUCTURE DEFINED.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A006 932 8/11 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATACOMPUTER SUPPORT OF SEISMIC DATA
ACTIVITY.

(U)

DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT. 1 NOV 74-31
JAN 75,

MAR 75 41P

CONTRACT: MDA903-74-C-00227, DARPA ORDER-2613

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *SEISMIC DATA, *DATA PROCESSING,
*DATA STORAGE SYSTEMS, INFORMATION RETRIEVAL,
COMMUNICATIONS NETWORKS, INTERFACES
IDENTIFIERS: ARPA COMPUTER NETWORK, COMPUTER
NETWORKS

(U)

(U)

THE PURPOSE OF THE PROJECT IS TO SUPPORT THE
ARPA-NMRO SEISMIC DATA ACTIVITY BY PROVIDING
DATA STORAGE AND RETRIEVAL SERVICES. THE ARPANET
WILL BE USED AS THE COMMUNICATION CHANNEL. AS PART
OF THE SERVICE, SEISMIC DATA WILL BE (A)
COLLECTED FROM THE ARPANET; (B) STORED; AND
(C) MADE AVAILABLE TO COMPUTERS ON THE ARPANET
IN A CONVENIENT AND TIMELY MANNER. THESE SERVICES
REPRESENT A SPECIAL APPLICATION OF THE ARPANET
DATACOMPUTER. THE ACTIVITY ON THE PROJECT TO DATE
HAS BEEN PRIMARILY IN TWO AREAS: HARDWARE
ACQUISITION AND COORDINATION WITH THE SEISMIC
COMMUNITY.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A007 480 9/2
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER BETHESDA
MD

PAKUNPK: A SET OF GENERAL PURPOSE COMPUTER
ROUTINES TO ACCOMPLISH WORD PACKING AND
UNPACKING. FOR USE WITH THE CDC FORTRAN FTN
COMPILER,

(U)

JAN 75 11P GOLDEN, MICHAEL E. ;
REPT. NO. NSRDC-4586

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPILERS, COMPUTER PROGRAMMING,
FORTRAN, MEMORY DEVICES
IDENTIFIERS: PAKUNPK COMPUTER CODE, CDC 6000
COMPUTERS

(U)

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THE PRECISION AVAILABLE ON A PARTICULAR COMPUTER
SYSTEM FOR THE STORAGE OF VARIABLE VALUES IS OFTEN
MORE THAN IS ACTUALLY NEEDED. A SET OF COMPUTER
ROUTINES, PAKUNPK, HAS BEEN DEVELOPED TO ENABLE THE
USER TO MAKE THE MOST EFFECTIVE USE OF CORE STORAGE
BY PACKING MORE THAN ONE DATA VALUE WITHIN A COMPUTER
WORD.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A007 739 9/2 8/6 8/2
ARMY ENGINEER TOPOGRAPHIC LABS FORT BELVOIR VA

A SYSTEM FOR TOPOGRAPHIC INQUIRY. NO. 3.
ALPHANUMERIC SUBSYSTEM DATA BASE
LISTING.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUL 70-30 JUN 74,
MAR 75 134P GUNTHER, ALDEN C. I
REPT. NO. ETL-0004
PROJ: DMA-4304

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA STORAGE SYSTEMS, *TOPOGRAPHY,
DATA MANAGEMENT, INFORMATION RETRIEVAL, DATA BASES (U)
IDENTIFIERS: *STOPIN SYSTEM (U)

THE SYSTEM FOR TOPOGRAPHIC INQUIRY
(STOPIN)--ALPHANUMERIC SUBSYSTEM IS AN ONLINE,
TOPOGRAPHIC DATA SYSTEM DEVELOPED TO DEMONSTRATE THE
CAPABILITY TO STORE, RETRIEVE, AND DISSEMINATE LARGE
QUANTITIES OF NON-GRAPHIC TOPOGRAPHIC INFORMATION.
THIS REPORT PRESENTS A COMPLETE LIST OF THE DATA
ELEMENTS INCLUDED IN THE STOPIN DATA BASE
STRUCTURE.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A007 759 20/12 9/1
SYSTEMS RESEARCH LABS INC DAYTON OHIO

SWITCHING AND MEMORY EFFECTS IN PHOSPHORUS-
ION-IMPLANTED ZNSE DEVICES.

(U)

DESCRIPTIVE NOTE: JOURNAL ARTICLE,
AUG 73 SP SHIN,B. K. ;PARK,Y. S. ;
CONTRACT: F33615-72-C-1099
PROJ: AF-7885
TASK: 788500
MONITOR: ARL 75-0031

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN PROCEEDINGS OF THE IEEE,
V62 N4 P538-540 APR 74.

DESCRIPTORS: *SEMICONDUCTORS, *SEMICONDUCTOR
DEVICES, SWITCHING, MEMORY DEVICES, ION
IMPLANTATION, PHOSPHORUS, ZINC SELENIDES, REPRINTS (U)
IDENTIFIERS: P TYPE SEMICONDUCTORS (U)

SWITCHING AND MEMORY EFFECTS HAVE BEEN OBSERVED IN
DIODES FABRICATED FROM PHOSPHORUS-IMPLANTED ZNSE.
THE MATERIALS HAVING A CARRIER CONCENTRATION OF
ABOUT 10 TO THE 18 TH POWER/CM WERE IMPLANTED AT 90
KEV TO AN ION DOSE OF 10 TO THE 16 TH POWER/SQ CM.
THE SWITCHING AND MEMORY PHENOMENA ARE INTERPRETED
IN TERMS OF FILLING AND EMPTYING OF THE TRAPPING
CENTERS IN THE IMPLANTED P-TYPE LAYER.
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A007 776 9/2 5/2
SYRACUSE UNIV N Y DEPT OF INDUSTRIAL ENGINEERING AND
OPERATIONS RESEARCH

A DISCRETE SIMULATION MODEL OF THE REVISED
AFMPC IOC MICROFORM SYSTEM. (U)

DESCRIPTIVE NOTE: INTERIM TECHNICAL REPT.,
FEB 75 88P TREHAN, VIJAY SARGENT, ROBERT
G. I
CONTRACT: F30602-74-C-0335
MONITOR: RADC TR-75-23

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA STORAGE SYSTEMS, *INFORMATION
SYSTEMS, MILITARY PERSONNEL, MICROFICHE,
INFORMATION RETRIEVAL, COMPUTER PROGRAMS,
COMPUTERIZED SIMULATION (U)
IDENTIFIERS: SIMSCRIPT 2.5 PROGRAMMING LANGUAGE (U)

A SIMSCRIPT-II.5 SIMULATION MODEL OF THE
REVISED AIR FORCE MILITARY PERSONNEL CENTER
(AFMPC) INITIAL OPERATING CAPABILITY (IOC)
MICROFORM SYSTEM BEING DEVELOPED BY ROME AIR
DEVELOPMENT CENTER (RADC) IS DESCRIBED. THIS
MODEL WILL ALLOW DIFFERENT WORKLOADS AND SYSTEM
CONFIGURATIONS TO BE ANALYZED FOR SYSTEM DESIGN, FOR
SCHEDULING OF DIFFERENT WORKLOADS, AND FOR AIDING IN
THE EVALUATION AND TESTING OF THE ACTUAL SYSTEM ONCE
IT IS IN OPERATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A007 783 9/2 8/2
HAMILTON STANDARD WINDSOR LOCKS CONN

COLOR DETECTION PROCESSING.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
FEB 75 61P HUBBARD, RICHARD G. ;
CONTRACT: F30602-73-C-0274
PROJ: AF-5569
TASK: 556903
MONITOR: RADC TR-75-28

UNCLASSIFIED REPORT

DESCRIPTORS: *IMAGE PROCESSING, COLORS, SIGNAL
PROCESSING, MAPPING, MEMORY DEVICES, DATA
PROCESSING

(U)

IDENTIFIERS: *COLOR DISCRIMINATION

(U)

IN THE COMPUTER OPERATION OF CONVERTING RASTER-SCAN DATA TO A LINEAL FORMAT FOR THE PURPOSES OF CARTOGRAPHIC IMAGE PROCESSING, THE ACCURACY OF THE OUTPUT LINEAL DATA, COMPARED TO THE GRAPHIC SOURCE, IS INFLUENCED BY THE QUALITY OF THE INPUT RASTER DATA. RASTER-SCAN DATA QUALITY IS CHARACTERIZED BY THE EXTENT TO WHICH MICROSCALE IMAGE VARIATIONS ARE CONVERTED INTO A CONSISTENT, MACROSCALE IMAGE REPRESENTATION. THE OBJECTIVE OF THE WORK DESCRIBED HEREIN WAS TO DETERMINE THAT THE FLEXIBLE CAPABILITY AND FUNCTIONAL CAPACITY OF A COMPUTER-CENTERED RASTER SCAN PROCESS WAS A PRACTICAL APPROACH WHICH COULD ENHANCE THE RASTER DATA PRODUCT AS AN INPUT TO THE LINEAL CONVERSION. THE EFFORT INCLUDED THE STUDY AND ANALYSIS OF COLOR DISCRIMINATION TECHNIQUES, AND DATA EDITING PROCEDURES, APPLICABLE TO COMPUTER USAGE, AS WELL AS THE IMPLEMENTATION OF THESE FUNCTIONS IN AN EXPERIMENTAL TEST SYSTEM INCLUDING THE AUTOMATIC COLOR SEPARATION DEVICE.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A008 012 9/2 8/6 8/2
ARMY ENGINEER TOPOGRAPHIC LABS FORT BELVOIR VA

A SYSTEM FOR TOPOGRAPHIC INQUIRY NO. 2
ALPHANUMERIC SUBSYSTEM.

(U)

DESCRIPTIVE NOTE: FINAL REPT. JUL 70-JUL 74,
MAR 75 103P GUNTHER, ALDEN CORELL ;
REPT. NO. ETL-0003
PROJ: DNA-4304

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT No. 3, AD-A007
739.

DESCRIPTORS: *DATA STORAGE SYSTEMS, *TOPOGRAPHY,
INFORMATION SYSTEMS, COMPUTER PROGRAMMING, DATA
BASES, DATA MANAGEMENT
IDENTIFIERS: *STOPIN SYSTEM

(U)

(U)

THE SYSTEM FOR TOPOGRAPHIC INQUIRY
(STOPIN)--ALPHANUMERIC SUBSYSTEM IS AN ON-LINE,
TOPOGRAPHIC DATA SYSTEM DEVELOPED TO DEMONSTRATE THE
CAPABILITY TO STORE, RETRIEVE, AND DISSEMINATE LARGE
QUANTITIES OF NON-GRAPHIC TOPOGRAPHIC INFORMATION.
THIS REPORT DESCRIBES THE ASSUMPTIONS AND DESIGN
CRITERIA EMPLOYED DURING THE DEVELOPMENT, OUTLINES
THE SOFTWARE PACKAGE DEVELOPED TO IMPLEMENT THE DATA
BASE, AND PROVIDES A DESCRIPTION OF EACH DATA FIELD
INCLUDING THE ALLOWABLE REQUESTS FOR
INFORMATION.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A008 631 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

MAGNETIC DISC UNIT.

(U)

MAR 75 6P
REPT. NO. FTD-HC-23-0981-75

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MECHANIZACE,
AUTOMATIZACE ADMINISTRATIVY (USSR) N8 P324 1973.

DESCRIPTORS: *MAGNETIC DISKS, *MEMORY DEVICES,
TRANSLATIONS, USSR

(U)

IDENTIFIERS: *MAGNETIC STORAGE

(U)

MAGNETIC DISC UNIT--TRANSLATION.

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A008 842 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

INTERFACE MESSAGE PROCESSORS FOR THE ARPA
COMPUTER NETWORK.

(U)

DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT, NO. 8, 1
OCT-31 DEC 74.

JAN 75 38P HEART, FRANK E. ;
REPT. NO. BBN-2988
CONTRACT: F08606-73-C-0027, ARPA ORDER-2351
PROJ: AF-2351

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED OCT 74, AD/
A-000 556.

DESCRIPTORS: *COMMUNICATIONS NETWORKS, *DATA
PROCESSING TERMINALS, RELIABILITY, MESSAGE
PROCESSING, COMPUTER PROGRAMMING, REDUNDANCY,
MULTIPROCESSORS, MEMORY DEVICES

(U)

IDENTIFIERS: *ARPA COMPUTER NETWORK, IMP (INTERFACE
MESSAGE PROCESSORS), *INTERFACE MESSAGE
PROCESSORS, COMPUTER NETWORKS

(U)

THE ARPA COMPUTER NETWORK IS A PACKET SWITCHING
STORE-AND-FORWARD COMMUNICATIONS SYSTEM DESIGNED FOR
USE BY COMPUTERS AND COMPUTER TERMINALS. THIS
REPORT CONCENTRATES ON THE NEW PLURIAUS IMP
DESIGN; IN PARTICULAR ON THOSE ASPECTS OF THE DESIGN
WHICH MAKE A HIGHLY RELIABLE SYSTEM. BOTH THE
MULTIPROCESSOR HARDWARE AND THE SOFTWARE WHICH
OPERATES ON IT INCLUDE A LARGE NUMBER OF FEATURES
DESIGNED TO INSURE RELIABLE OPERATION; THE DESIGN IS
APPLICABLE TO A MUCH BROADER SET OF USES THAN THE
IMP ALGORITHM.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A008 877 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATA COMPUTER PROJECT. (U)

DESCRIPTIVE NOTE: SEMI-ANNUAL TECHNICAL REPT. 1 JUL 74-
31 DEC 74.

DEC 74 110P

CONTRACT: MDA903-74-C-0225, ARPA ORDER-2687

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED JUN 74, AD-
787 677.

DESCRIPTORS: *DATA STORAGE SYSTEMS, *COMMUNICATIONS
NETWORKS, TIME SHARING, DATA PROCESSING, COMPUTER
PROGRAMMING, PROGRAMMING LANGUAGES, INSTRUCTION
MANUALS, ON LINE SYSTEMS (U)
IDENTIFIERS: *DATA COMPUTER PROJECT, *COMPUTER
NETWORKS, ARPA COMPUTER NETWORK (U)

THE DATA COMPUTER SYSTEM IS BEING DESIGNED AS A
LARGE-SCALE DATA STORAGE UTILITY TO BE ACCESSED FROM
REMOTE COMPUTERS ON THE ARPANET AND, POTENTIALLY,
ON OTHER NETWORKS. THE DEVELOPMENT IS PHASED, WITH
EACH SUCCESSIVE RELEASE OF THE SYSTEM OFFERING
INCREASED CAPABILITIES TO USERS. DURING THE PRESENT
REPORTING PERIOD, THE THIRD MAJOR RELEASE OF THE
SYSTEM BECAME OPERATIONAL. THIS RELEASE, WHILE
STILL PRIMITIVE IN MANY RESPECTS, IS PROVIDING
SERVICE FOR A WIDE RANGE OF APPLICATIONS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-ADD9 218 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE PROJECT MAC

PROGRAM RESTRUCTURING FOR VIRTUAL MEMORY
SYSTEMS.

(U)

DESCRIPTIVE NOTE: INTERIM SCIENTIFIC REPT.,
MAR 75 224P JOHNSON, JERRY W. ;
REPT. NO. MAC-TR-148
CONTRACT: N00014-70-A-0362-0006

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMMING, *MEMORY DEVICES,
MATHEMATICAL LOGIC, CLUSTERING, COMPUTATIONS,
ALGORITHMS, THEOREMS

(U)

IDENTIFIERS: *VIRTUAL MEMORY, *PAGING, MAC
PROJECT, MULTIPROGRAMMING, IBM 360 COMPUTERS

(U)

THE PROBLEM AREA ADDRESSED IN THIS REPORT IS
PROGRAM RESTRUCTURING, A METHOD OF REORDERING THE
RELOCATABLE SECTORS (SUBROUTINE AND DATA MODULES)
OF A PROGRAM IN ITS ADDRESS SPACE TO INCREASE THE
LOCALITY OF THE PROGRAM'S REFERENCE BEHAVIOR, THEREBY
REDUCING THE NUMBER OF PAGE FETCHES REQUIRED FOR ITS
EXECUTION IN A VIRTUAL MEMORY SYSTEM. THEORETICAL
UPPER AND LOWER (OPTIMUM) BOUNDS ARE DERIVED FOR
THE PAGING PERFORMANCE OF PROGRAMS OVER ALL
PARTITIONS OF RELOCATABLE SECTORS INTO PAGES.
PROGRAM RESTRUCTURING TECHNIQUES ARE DEVELOPED
WHICH USE INTERSECTOR REFERENCE MODELS BASED ON
SECTOR WORKING SETS AND SECTOR STACK DISTANCES.
THESE INTERSECTOR REFERENCE MODELS IDENTIFY THE
LOCAL REFERENCE BEHAVIOR, AND CLUSTERING PROCEDURES
ARE DEVELOPED THAT USE THIS LOCAL REFERENCE BEHAVIOR
TO REARRANGE SECTORS INTO PAGES SUCH THAT SIGNIFICANT
IMPROVEMENT IN PAGING PERFORMANCE IS OBTAINED.
RESULTS OF MEASUREMENTS OF PAGING PERFORMANCE
OBTAINED IN THE COMPUTER LABORATORY ARE DISCUSSED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A009 430 9/2
COLLEGE OF WILLIAM AND MARY WILLIAMSBURG VA DEPT OF
MATHEMATICS

SYSTEM BALANCE ANALYSIS FOR VECTOR
COMPUTERS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 75 29P KNIGHT, JOHN C. ; POOLE,
WILLIAM G. , JR. ; VOIGHT, ROBERT G. ;
REPT. NO. TR-7
CONTRACT: N00014-73-A-0374-0001, NGR-47-102-001
PROJ: NR-044-459

UNCLASSIFIED REPORT

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *INPUT
OUTPUT PROCESSING, ARITHMETIC UNITS, MEMORY DEVICES,
COMPUTATIONS, ALGORITHMS
IDENTIFIERS: *VECTOR COMPUTERS

(U)

(U)

THE AVAILABILITY OF VECTOR PROCESSORS CAPABLE OF
SUSTAINING COMPUTING RATES OF (10 TO THE 8TH
POWER) ARITHMETIC RESULTS PER SECOND HAS RAISED THE
QUESTION OF WHETHER PERIPHERAL STORAGE DEVICES
REPRESENTING CURRENT TECHNOLOGY CAN KEEP SUCH
PROCESSORS SUPPLIED WITH DATA. BY CAREFULLY
EXAMINING THE SOLUTION OF A LARGE BANDED LINEAR
SYSTEM ON THESE COMPUTERS IT IS FOUND THAT EVEN UNDER
IDEAL CONDITIONS THE PROCESSORS WILL FREQUENTLY BE
WAITING FOR PROBLEM DATA.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A009 833 8/3 9/2
RHODE ISLAND UNIV KINGSTON GRADUATE SCHOOL OF
OCEANOGRAPHY

A STORAGE FORMAT FOR CURRENT METER
DATA.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 75 21P KRAMER, WILLIAM P. ;
REPT. NO. REF-75-2
CONTRACT: N00014-68-A-0215-0003
PROJ: NR-083-165

UNCLASSIFIED REPORT

DESCRIPTORS: *OCEAN CURRENTS, *DATA STORAGE SYSTEMS,
MAGNETIC TAPE, DATA PROCESSING, FLOWMETERS

(U)

A RECENTLY ESTABLISHED DATA ARCHIVING GROUP AT
URI HAS ADOPTED A FORMAT FOR THE STORAGE OF CURRENT
METER DATA. THE STORAGE FORMAT CHOSEN SERVES TWO
PURPOSES. IT IS USED FOR IN-HOUSE DATA STORAGE AND
PROCESSING AND COPIES ARE SENT TO EXTERNAL DATA
AGENCIES. EIGHTY CHARACTER CARD IMAGES ARE BLOCKED
ONTO A NINE TRACK TAPE IN EBCDIC CHARACTER CODE AT
A PACKING DENSITY OF 800 BITS PER INCH. THE FIRST
TEN TAPE RECORDS OF EACH FILE CONTAIN HEADER
INFORMATION (LABEL RECORDS) REVEALING THE STATION
INFORMATION. WITHIN THESE FIRST TEN TAPE RECORDS
THE USER IS TOLD THE VARIABLES STORED AND THE FORMAT
OF THE DATA RECORDS WHICH FOLLOW.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A009 887 9/2
ILLINOIS UNIV URBANA COORDINATED SCIENCE LAB

HIGH DENSITY OPTICAL MEMORY. (U)

DESCRIPTIVE NOTE: QUARTERLY PROGRESS REPT. OCT-DEC 74.

APR 75 4P

CONTRACT: N00014-67-A-0305-0015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *MEMORY DEVICES, CRYSTALS, ELECTRON
BEAMS, THIN FILMS, ALUMINUM, POTASSIUM CHLORIDE,
COLORING, INTERFACES (U)

IDENTIFIERS: *OPTICAL CRYSTAL MEMORIES (U)

DURING THIS PERIOD, THE PROBLEM OF PRODUCING
UNIFORMLY COLORED CRYSTALS USING ELECTRON BOMBARDMENT
HAS BEEN INVESTIGATED. COMPUTER INTERFACE HARDWARE
HAS BEEN COMPLETED AND PRELIMINARY PROGRAMS HAVE BEEN
WRITTEN FOR COMPUTER TESTING OF THE MEMORY. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-AD10 002 9/1 20/12 9/2
CLARKSON COLL OF TECHNOLOGY POTSDAM N Y

CTRUMP: ITS DEVELOPMENT AND USE IN SOLUTION
OF PROBLEMS OF CONDUCTION HEAT FLOW IN
SOLID STATE DEVICES. (U)

DESCRIPTIVE NOTE: PHASE REPT.,
MAR 75 154P BASILE, ROBERT L. ; DOMINGOS,
HENRY ;
CONTRACT: F30602-72-C-0463
MONITOR: RADC TR-75-74

UNCLASSIFIED REPORT

DESCRIPTORS: *SEMICONDUCTOR DEVICES,
*CONDUCTION(HEAT TRANSFER), *COMPUTER
PROGRAMMING, SOLID STATE PHYSICS, THIN FILMS,
GALLIUM ARSENIDES, CARBON RESISTORS, COMPUTATIONS,
FORTRAN, GUNN DIODES (U)
IDENTIFIERS: IBM 360/44 COMPUTERS, CTRUMP COMPUTER
PROGRAM (U)

THE TRUMP PROGRAM, DEVELOPED BY ARTHUR
EDWARDS OF THE LAWRENCE RADIATION LABORATORY,
HAS BEEN ADAPTED FOR USE ON THE IBM 360/44, UNDER
THE NAME CTRUMP. MODIFICATIONS WERE MADE TO
ENABLE CALCULATIONS OF THREE-DIMENSIONAL HEAT FLOW IN
SOLID STATE DEVICES, AS A RESULT OF INTERNAL
CONDUCTION AND INTERNAL HEAT GENERATION WITH CONSTANT
BOUNDARY CONDITIONS. CTRUMP WAS THEN USED TO
CALCULATE TEMPERATURE RISE IN THIN FILM AND CARBON
RESISTOR MODELS, AS WELL AS IN A MODEL OF A GALLIUM
ARSENIDE GUNN EFFECT DIODE. AN OPERATING MANUAL
FOR CTRUMP IS INCLUDED AS AN APPENDIX. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A010 235 8/11 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATA-COMPUTER SUPPORT OF SEISMIC DATA
ACTIVITY.

(U)

DESCRIPTIVE NOTE: ANNUAL TECHNICAL REPT. 22 APR-31 DEC
74.

MAY 75 12P
CONTRACT: MDA903-74-C-0227, ARPA ORDER-2613

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 21 MAR 75,
AD/A006 932.

DESCRIPTORS: *SEISMIC DATA, *DATA STORAGE SYSTEMS,
INFORMATION RETRIEVAL, COMMUNICATIONS NETWORKS,
INTERFACES, ON LINE SYSTEMS

(U)

IDENTIFIERS: ARPA COMPUTER NETWORK, COMPUTER
NETWORKS

(U)

THE PURPOSE OF THE PROJECT IS TO SUPPORT THE
ARPA-NMRO SEISMIC DATA ACTIVITY BY
PROVIDING DATA STORAGE AND RETRIEVAL SERVICES. THE
ARPANET WILL BE USED AS THE COMMUNICATION CHANNEL.
AS PART OF THE SERVICE, SEISMIC DATA WILL BE
(A) COLLECTED FROM THE ARPANET; (B) STORED;
AND (C) MADE AVAILABLE TO COMPUTERS ON THE
ARPANET IN A CONVENIENT AND TIMELY MANNER. THE
ACTIVITY ON THE PROJECT TO DATE HAS BEEN PRIMARILY IN
TWO AREAS: HARDWARE ACQUISITION AND COORDINATION
WITH THE SEISMIC COMMUNITY.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A010 556 8/11 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATA COMPUTER SUPPORT OF SEISMIC DATA
ACTIVITY.

(U)

DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT. 1 FEB-30
APR 75.

MAY 75 15P

CONTRACT: MDA903-74-C-0227, ARPA ORDER-2613

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 21 MAR 75,
AD-A006 932.

DESCRIPTORS: *SEISMIC DATA, *DATA PROCESSING,
*DATA STORAGE SYSTEMS, INFORMATION RETRIEVAL,
COMMUNICATIONS NETWORKS, INTERFACES

(U)

IDENTIFIERS: ARPA COMPUTER NETWORK, COMPUTER
NETWORKS

(U)

THE PURPOSE OF THE PROJECT IS TO SUPPORT THE
ARPA-NMRO SEISMIC DATA ACTIVITY BY
PROVIDING DATA STORAGE AND RETRIEVAL SERVICES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A010 590 9/2
MITRE CORP MCLEAN VA

DESIGN OF A SECURE FILE MANAGEMENT SYSTEM,

(U)

APR 75 31P WHITE, J. C. C. ;
REPT. NO. MTR-2931
CONTRACT: F19628-73-C-0001
PROJ: AF-7070
MONITOR: ESD TR-75-57

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA PROCESSING SECURITY, *DATA
STORAGE SYSTEMS, MEMORY DEVICES, PROTECTION (U)
IDENTIFIERS: PDP-11/45 COMPUTERS, *COMPUTER
PRIVACY, *COMPUTER INFORMATION SECURITY, *FILE
MANAGEMENT SYSTEMS (U)

A FILE MANAGEMENT/OPERATING SYSTEM BASED ON THE
PDP-11/45 SECURITY KERNEL IS DESCRIBED. THE
SYSTEM WILL ALLOW COMPLETE SHARING OF FILES, SUBJECT
TO THE CONTROL OF THE SECURITY KERNEL, SO THAT
PROBLEMS BROUGHT ABOUT BY THE CONFLICTING
REQUIREMENTS FOR SECURITY AND SHARING CAN BE
IDENTIFIED AND EXPLORED. IT WILL PROVIDE A VEHICLE
FOR EXPERIMENTATION WITH THE EXTENSIONS OF THE KERNEL
REQUIRED FOR MULTISOURCE INFORMATION
CORRELATION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A010 719 9/5 9/2
ILLINOIS UNIV URBANA COORDINATED SCIENCE LAB

DESIGN OF TOTALLY SELF-CHECKING
ASYNCHRONOUS SEQUENTIAL MACHINES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 75 121P OZGUNER, FUSUN ;
REPT. NO. R-679, UILU-ENG-75-2214
CONTRACT: DAAB07-72-C-0259

UNCLASSIFIED REPORT

DESCRIPTORS: *SWITCHING CIRCUITS, LOGIC CIRCUITS,
FLIP FLOP CIRCUITS, GATES(CIRCUITS),
ASYNCHRONOUS SYSTEMS, REDUNDANT COMPONENTS,
CODING, THEOREMS, THESES

(U)

IDENTIFIERS: *SEQUENTIAL MACHINES, *ASYNCHRONOUS
SEQUENTIAL CIRCUITS, FAULT DETECTION, MEALEY
MODEL

(U)

PROPERTIES OF STATE ASSIGNMENTS AND CIRCUIT
REALIZATIONS THAT LEAD TO TOTALLY SELF-CHECKING
ASYNCHRONOUS MACHINE DESIGNS ARE STUDIED. THE
STATE VARIABLES AND THE OUTPUTS ARE ENCODED SO THAT
ALL SINGLE AND UNIDIRECTIONAL FAULTS CAUSE THE
MACHINE TO ASSUME A NONCODE STATE OR OUTPUT.
SEVERAL STATE ASSIGNMENT METHODS ARE PRESENTED.
ONE IS THE TWO-RAIL ASSIGNMENT WHERE THE FEEDBACK
LINES ARE CHECKED WITH A TWO-RAIL CHECKER TREE. IT
IS SHOWN THAT ANY TWO-RAIL CHECKER CANNOT BE USED
BECAUSE THE STATE ASSIGNMENT DOES NOT IN GENERAL HAVE
ALL THE TWO-RAIL CODEWORDS. THEREFORE A CHECKER
TREE THAT CAN BE CHECKED BY THE STATE ASSIGNMENT CODE
MUST BE SELECTED. AN ALGORITHM FOR FINDING SUCH A
TREE IS PRESENTED. THE EFFECT OF A FAULT ON THE
ENCODED OUTPUTS IS STUDIED. A SELF-CHECKING
CIRCUIT PRODUCES A NONCODE OUTPUT FOR AT LEAST ONE
CODE SPACE INPUT. IT IS SHOWN THAT A SELF-CHECKING
ASYNCHRONOUS MACHINE WILL PRODUCE A NONCODE OUTPUT
FOR AT LEAST ONE INPUT SEQUENCE WHICH OCCURS UNDER
NORMAL OPERATION. FOR THIS DESIGN, THE DESTINATION
SETS OF EACH INPUT COLUMN OF THE FLOW TABLE ARE
ENCODED WITH A CONSTANT WEIGHT OR ANOTHER UNORDERED
CODE. REDUNDANCIES IN THE CODE AND IN THE
REALIZATION ARE DISCUSSED. IT IS SHOWN THAT EXTRA
OUTPUTS CAN BE USED FOR THE DETECTION OF PRIMARY
INPUT FAULTS AND FOR A CLASS OF FLOW TABLES FOR
FASTER FAULT DETECTION.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-AD10 848 9/4 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE RESEARCH LAB OF
ELECTRONICS

COMPUTER ARCHITECTURE FOR SIGNAL PROCESSING,

(U)

OCT 74 10P ALLEN, JONATHAN ;
CONTRACT: DAAB07-74-C-0630, N00014-67-A-0204-0064

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN PROCEEDINGS OF THE IEEE,
V63 N4 P624-633 APR 75.

DESCRIPTORS: *SIGNAL PROCESSING, *COMPUTER
ARCHITECTURE, DIGITAL SYSTEMS, ALGORITHMS,
PROGRAMMING LANGUAGES, REAL TIME, DIGITAL
COMPUTERS, COSTS, HIGH RATE, LOGIC CIRCUITS,
INTEGRATED CIRCUITS, REPRINTS, MEMORY DEVICES

(U)

THERE IS AN INCREASING TREND TO USE DIGITAL SIGNAL-
PROCESSING TECHNIQUES TO SOLVE REAL-TIME PROBLEMS.
THIS LEADS TO A NEED FOR PROCESSORS WHICH CAN
PERFORM COMPLICATED SIGNAL-PROCESSING ALGORITHMS ON
LARGE AMOUNTS OF DATA AT HIGH SPEEDS. COMPUTER
ARCHITECTURES FOR THIS PURPOSE ARE SHOWN TO ARISE
FROM A CONSIDERATION OF SEVERAL STRUCTURAL FACTORS,
INCLUDING TECHNOLOGY, THE ALGORITHMS TO BE PERFORMED,
DATA STRUCTURES, AND THE PROGRAMMING LANGUAGE. WHEN
THESE FACTORS ARE COMPLEMENTARY, EFFICIENT YET
ECONOMICAL DESIGNS RESULT. THE STRUCTURAL FACTORS
ARE DESCRIBED, AND THEN SEVERAL COMPUTER DESIGNS ARE
DISCUSSED IN LIGHT OF THIS CONCEPTUAL FRAMEWORK.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A011 325 20/1 9/2 9/5
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

SURFACE ACOUSTOELECTRIC CORRELATOR WITH
SURFACE STATE MEMORY.

(U)

DESCRIPTIVE NOTE: JOURNAL ARTICLE,
74 4P CAFARELLA, JOHN H. ;BERS,
ABRAHAM I STERN, ERNEST ;
REPT. NO. MS-3822
CONTRACT: F19628-73-C-0002
PROJ: DA-7-X-263304-D-215
MONITOR: ESD TR-75-152

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN IEEE ULTRASONIC
SYMPOSIUM PROCEEDINGS, P216-219 1974.

DESCRIPTORS: *SURFACE WAVES, *MEMORY DEVICES,
*CORRELATORS, ACOUSTIC WAVES, SILICON, ACOUSTIC
SIGNALS, DATA STORAGE SYSTEMS, LITHIUM COMPOUNDS,
NIOBATES, REPRINTS

(U)

IDENTIFIERS: MEMORY CORRELATORS, *SURFACE STATE
MEMORIES, *SURFACE ACOUSTOELECTRIC CORRELATORS,
TIME CONSTANT, TIME BANDWIDTH PRODUCT

(U)

THE RESULTS ARE PRESENTED FROM AN EXPERIMENTAL
MEMORY-CORRELATOR. SURFACE STATE CHARGE STORAGE
IS INCORPORATED IN A COUPLED LINBO3-SI SYSTEM
TO YIELD A DEVICE WHICH STORES A SPATIAL REPLICA OF A
REFERENCE ACOUSTIC SIGNAL AND GIVES THE CORRELATION
FUNCTION OF OTHER ACOUSTIC SIGNALS WITH THE
REFERENCE. THE TIME CONSTANT FOR STORING A PATTERN
IN CHARGED SURFACE STATES IS MADE MUCH SMALLER THAN
THE THERMAL DECAY TIME CONSTANT ASSOCIATED WITH THE
TRAPS. THIS EFFECT ALLOWS WIDE BANDWIDTH SIGNALS TO
BE STORED FOR LONG TIMES. THE PRESENT DEVICE USES
SI ON Y-Z LINBO3 AT 166 MHZ. A SHORT
R.F. STROBE IS APPLIED TO THE SILICON PLATE TO EFFECT
THE STORAGE OF THE ACOUSTIC WAVE PATTERN IN SURFACE
STATES. THE CORRELATION LOSS IS 47 DB FOR A 4.4
MICROSEC CW SIGNAL. THE STROBE DURATION OF 0.4
MICROSEC CORRESPONDS TO A 2.5 MHZ BANDWIDTH
CAPACITY, AND A TIME-BANDWIDTH PRODUCT GREATER THAN
10 HAS BEEN DEMONSTRATED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A011 326 20/1 9/2 9/5
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

SURFACE WAVE CORRELATOR - CONVOLVER WITH
MEMORY.

(U)

DESCRIPTIVE NOTE: JOURNAL ARTICLE,
74 10P BERS, ABRAHAM ; CAFARELLA, JOHN

H. i

REPT. NO. MS-3890
CONTRACT: F19628-73-C-0002
PROJ: DA-7-X-263304-D-215
MONITOR: ESD TR-75-154

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN IEEE ULTRASONIC
SYMPOSIUM PROCEEDINGS, P778-787 1974.

DESCRIPTORS: *SURFACE WAVES, *ACOUSTIC WAVES,
*MEMORY DEVICES, CORRELATORS, SEMICONDUCTORS,
DYNAMICS, REPRINTS

(U)

IDENTIFIERS: *MEMORY CONVOLVERS, *MEMORY
CORRELATORS, SURFACE ACOUSTIC WAVES

(U)

THE PRINCIPLES OF OPERATION AND APPLICATION OF
SURFACE ACOUSTIC WAVE (SAW) CORRELATORS AND
CONVOLVERS WHICH CONTAIN A MEMORY FOR SIGNALS ARE
DESCRIBED. A DETAILED ANALYSIS IS PRESENTED FOR THE
DYNAMICS OF SURFACE STATES ON A SEMI-CONDUCTOR AS A
MEMORY IN A SAW CORRELATOR-CONVOLVER.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A011 390 9/5 9/2
WESTINGHOUSE RESEARCH LABS PITTSBURGH PA

THIN FILM DISPLAY SWITCHES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 APR-12 DEC 74,
MAY 75 43P BRODY, THOMAS P. ;YU, KARL
K. ;

REPT. NO. 75-9G9-PRNTM-R1
CONTRACT: N00014-71-C-0269
PROJ: NR-215-169

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *MATRIX DISPLAYS, *THIN FILM STORAGE
DEVICES, TRANSISTORS, PANELS, ELECTROLUMINESCENCE,
DISPLAY SYSTEMS

(U)

IDENTIFIERS: ELECTROLUMINESCENT PANELS

(U)

A THIN FILM TRANSISTOR WITH A FLOATING SECOND GATE, CAPABLE OF NONVOLATILE STORAGE OF ANALOG DATA, WAS THE SUBJECT OF THE INVESTIGATION. FURTHER DEVELOPMENT RESULTED IN A CLOSELY CONTROLLED, REPRODUCIBLE FABRIACATION PROCESS AND A HIGHER VOLTAGE CAPABILITY. A 40X40 ELEMENT, 1 INCH SQUARE MATRIX, CONSISTING OF X-Y ADDRESSIBLE MEMORY TRANSISTORS AT EACH POINT WAS DESIGNED, LAID OUT USING CAD TECHNIQUES AND FABRICATED IN A SINGLE VACUUM DEPOSITION CYCLE. MASK AND SUBSTRATE REGISTRATION TECHNIQUES WERE ALSO IMPROVED, RESULTING AN EXCELLENT RUN-TO-RUN REPRODUCIBILITY OF THE DEPOSITION PATTERNS. BY COATING THE FINISHED MEMORY MATRICES WITH AN ELECTROLUMINESCENT PHOSPHOR (WESTINGHOUSE 'HYPERMAINTENANCE' PHOSPHOR), PROVIDING A COMMON TRANSPARENT FRONT ELECTRODE AND SEALING WITH A COVER-GLASS, COMPLETE 40 X 40 ELEMENT STORAGE DISPLAYS WERE MADE. THE DISPLAYS WERE OPERABLE UP TO 140V PEAK-TO-PEAK. THE EL DRIVING FREQUENCIES RANGED FROM 3 TO 20 KHZ. WRITING OF INFORMATION INTO INDIVIDUAL ELEMENTS WAS DEMONSTRATED BY (MANUAL) PULSING OF ROWS AND COLUMNS. LETTERS WERE WRITTEN INTO THE PANEL IN THIS MANNER, AND THE NON-VOLATILE STORAGE OF SUCH PATTERNS OVER PERIODS OF EXCESS OF 90 MINUTES WAS DEMONSTRATED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A011 535 9/5 9/2 17/9
STANFORD RESEARCH INST MENLO PARK CALIF

CELLULAR LOGIC-IN-MEMORY ARRAYS.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
SEP 74 42P PEASE, MARSHALL C. ;
CONTRACT: N00014-72-C-0431
PROJ: SRI-1982

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *SIGNAL PROCESSING, *DIGITAL FILTERS,
FOURIER TRANSFORMATION, LOGIC CIRCUITS, SHIFT
REGISTERS, RADAR SIGNALS, INTEGRATED CIRCUITS (U)
IDENTIFIERS: CELLULAR LOGIC IN MEMORY ARRAYS, FAST
FOURIER TRANSFORM, DISCRETE FOURIER
TRANSFORMATION, LARGE SCALE INTEGRATED CIRCUITS (U)

THE OBJECTIVE OF THIS EFFORT WAS TO DETERMINE THE
ENGINEERING FEASIBILITY OF AN ALL-DIGITAL TRANSVERSE
FILTER FOR SIGNAL PROCESSING REQUIREMENTS. THIS
ASSESSMENT IS MADE BY ANALYZING ALTERNATIVE CIRCUIT
CONFIGURATIONS TO ENOUGH ACCURACY AND DEPTH TO
DETERMINE IF PRESCRIBED FUNCTIONAL AND SPEED
SPECIFICATIONS CAN BE MET, AND IF SO, TO CALCULATE
THE APPROXIMATE HARDWARE COST. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A011 702 9/2 20/3 18/8
ROCKWELL INTERNATIONAL CORP ANAHEIM CALIF ELECTRONICS
RESEARCH DIV

EFFECTS OF NUCLEAR RADIATION ON MAGNETIC
BUBBLE DOMAIN MATERIALS AND DEVICES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 MAY 73-31 DEC 74,
JAN 75 91P WILLIAMS, ROSS A. ;
REPT. NO. C73-954/501
CONTRACT: F19628-73-C-0250
PROJ: AF-6096
TASK: 609604
MONITOR: AFCRL TR-75-0037

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *THIN FILM STORAGE DEVICES, *MEMORY
DEVICES, *TRANSIENT RADIATION EFFECTS, *MAGNETIC
DOMAINS, SHIFT REGISTERS, THICK FILMS, GARNET,
RADIATION EFFECTS, X RAYS, MAGNETIC DETECTORS,
MAGNETIC ALLOYS, GAMMA RAYS

(U)

IDENTIFIERS: *MAGNETIC BUBBLE DOMAINS,
PERMALLOYS

(U)

THE EFFORT CONCENTRATES ON RADIATION-INDUCED
FAILURE THRESHOLDS AND ASSOCIATED MECHANISMS FOR
MAGNETIC BUBBLE DOMAIN DEVICES. HOWEVER,
EXPERIMENTS TO INVESTIGATE THE EFFECTS OF LOW-ENERGY
X RAYS ON BUBBLE DOMAIN MATERIALS ARE ALSO
DESCRIBED. IN THE LOW-ENERGY X-RAY STUDIES,
CHANGES IN HARD BUBBLE SUPPRESSION PROPERTIES, OR
FERROMAGNETIC-RESONANCE SPECTRA, WERE LOOKED FOR IN
EITHER OF TWO TYPES OF IRON GARNETS EXPOSED TO MORE
THAN 6,000,000 R. THE PRIMARY EFFORT CONCERNED
TRANSIENT RADIATION-INDUCED MEMORY LOSS. A 30 NS
PULSE OF APPROXIMATELY 1.5 MEV ELECTRONS WAS
USED. FAILURE PROBABILITIES AS A FUNCTION OF DOSE
PER PULSE WERE OBTAINED FOR SEVERAL DEVICES.
TRANSIENT RADIATION-INDUCED BURNOUT OF DOMAIN
SENSORS WAS ALSO STUDIED FOR BOTH THIN (300 A)
AND THICK (4000 A) PERMALLOY DETECTORS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A011 800 9/2

HAWAII UNIV HONOLULU DEPT OF INFORMATION AND COMPUTER
SCIENCE

OPTIMAL CONTROL OF DEMAND-PAGING SYSTEMS,

(U)

75 8P LET,ART ;
CONTRACT: DA-ARO-D-31-124-71-G43
MONITOR: ARO 8803.15-EL

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, *CONTROL THEORY,
DYNAMIC PROGRAMMING, MATHEMATICAL MODELS,
ALGORITHMS, THEOREMS

(U)

IDENTIFIERS: *PAGING, VIRTUAL MEMORY, COMPUTER
STORAGE MANAGEMENT, STOCHASTIC CONTROL

(U)

DEMAND-PAGING SYSTEMS ARE CHARACTERIZED AS
STOCHASTIC CONTROL PROCESSES, AND OPTIMAL PAGE
REPLACEMENT DECISIONS ARE DETERMINED BY MEANS OF
DYNAMIC PROGRAMMING. THIS APPROACH IS
DISTINGUISHED FROM OTHERS BY ITS USE OF PAGE
STRUCTURE INFORMATION, WHICH MAY BE EITHER SUPPLIED A
PRIORI OR ELSE DYNAMICALLY LEARNED. THE MAIN
RESULT IS AN OPTIMAL REALIZABLE SOLUTION FOR A
GENERAL CLASS OF REPLACEMENT PROBLEMS. THE
RESULTING ALGORITHM SUBSUMES OTHERS (INCLUDING (A
SUB 0)) AS SPECIAL CASES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A013 005 9/5 9/1
RCA ELECTRONIC COMPONENTS PRINCETON N J MICROWAVE
TECHNOLOGY CENTER

MICROWAVE FREQUENCY MEMORY USING GAAS
TRANSFERRED-ELECTRON DEVICES. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 15 MAY 74-14
MAY 75,

JUN 75 35P CURTICE, WALTER R. ;
REPT. NO. PRRL-75-CR-34
CONTRACT: N00014-74-C-0371
PROJ: NR-251-015, RF54-545
TASK: RF54-545-001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *REGISTERS(CIRCUITS), FREQUENCY,
MICROWAVE EQUIPMENT, GALLIUM ARSENIDES, STRIP
TRANSMISSION LINES, ELECTRON TRANSFER, SEMICONDUCTOR
DEVICES, MEMORY DEVICES, VARACTOR DIODES, TUNING
DEVICES, GUNN DIODES (U)
IDENTIFIERS: *TRANSFERRED ELECTRON DEVICES,
FREQUENCY MEMORIZERS (U)

TRANSFERRED-ELECTRON DEVICES (TEDS) IN
MICROSTRIP RF CIRCUITS HAVE BEEN STUDIED FOR USE IN
FREQUENCY MEMORY APPLICATIONS. THE CLOSEST
FREQUENCY SPACING OBTAINED FOR MEMORY STATES IN AN
EXPERIMENTAL SYSTEM IS 22.4 MHZ. TWENTY STATES
ARE AVAILABLE BETWEEN 11.33 GHZ AND 10.755 GHZ.
IT WAS SHOWN POSSIBLE TO OPERATE MICROSTRIP
CIRCUITS IN PARALLEL TO OBTAIN RESONANCES SPACED HALF
THE SPACING FOR EACH INDIVIDUAL CIRCUIT. ELECTRONIC
TUNING OF THE WHOLE SET OF FREQUENCY STATES BY MEANS
OF A VARACTOR WAS DEMONSTRATED. THE SWITCH-ON
CHARACTERISTIC OF THE STATES WAS STUDIED, AND IT IS
SHOWN THAT THE MEMORIZER'S RF OUTPUT SIGNAL IS PHASE-
LOCKED TO THE INPUT SIGNAL WITHIN 50 NS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A013 318 9/2
STANFORD UNIV CALIF STANFORD ELECTRONICS LABS

COMPUTER PERFORMANCE MEASUREMENT AND
EVALUATION METHODS: ANALYSIS AND
APPLICATIONS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUN 74 180P SVOBODOVA, LIBA ;
REPT. NO. SU-SEL-74-036, TR-72
CONTRACT: N00014-67-A-0112-0044

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES REPORT DATED JUN 74,
AD/A-000 947.

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *COMPUTER
PROGRAMMING, MONITORS, PERFORMANCE, INTERFACES,
MEMORY DEVICES, MATHEMATICAL MODELS, SYSTEMS
ANALYSIS, THESES
IDENTIFIERS: *COMPUTER PERFORMANCE EVALUATION,
*COMPUMETRICS

(U)

(U)

THIS STUDY CONCENTRATES ON THE MEASUREMENT PROBLEM
OF A COMPLEX COMPUTER SYSTEM. SEVERAL ISSUES ARE
ATTACKED: SYSTEM REPRESENTATION, EVALUATION AND
APPLICATION OF COMPUTER PERFORMANCE EVALUATION TOOLS,
POWER OF A PERFORMANCE MONITOR, DESIGN OF A
PERFORMANCE MONITOR. FOR AN EXTERNAL OBSERVER,
PERFORMANCE OF A COMPUTER SYSTEM IS THE QUALITY AND
THE QUANTITY OF SERVICE DELIVERED BY THE SYSTEM.
HOWEVER, A COMPUTER SYSTEM IS A HIERARCHY OF
SEVERAL LEVELS, THE LOWEST LEVEL BEING THE CIRCUIT
LEVEL, THE HIGHEST THE SOFTWARE SUPPORT LEVEL.
PERFORMANCE OF THE SYSTEM AS A WHOLE IS DETERMINED
BY PERFORMANCE OF INDIVIDUAL LEVELS. A CONCEPTUAL
MODEL OF AN EVALUATED COMPUTER SYSTEM, THE P-MODEL,
IS DEFINED IN THIS STUDY USING THE PRINCIPLES OF
GENERAL SYSTEMS THEORY; IT PROVIDES A CONVENIENT
UNIFORM DESCRIPTION FOR OBSERVING A COMPUTER SYSTEM
AT ANY OF THESE LEVELS. THE ELEMENTS OF THE P-
MODEL ARE THE LEVEL COMPONENTS; THE OUTPUT ARE
PERFORMANCE MEASURES RELEVANT TO THE PARTICULAR LEVEL
AND THE PURPOSE OF EVALUATION.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A013 829 9/2
ARMY COMPUTER SYSTEMS COMMAND FORT BELVOIR VA

AN ALGORITHM FOR BLOCKING FACTOR
OPTIMIZATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
JUL 75 40P PICKARD, LARRY A. ; RAINES,
MARVIN D. ;
REPT. NO. USACSC-AT-75-03
PROJ: DA-SX-865803-MY-10
TASK: SX-865803-MY-1002

UNCLASSIFIED REPORT

DESCRIPTORS: *FILES(RECORDS), *MAGNETIC TAPE,
*MAGNETIC DISKS, *BLOCKING, ALGORITHMS,
OPTIMIZATION, MATHEMATICAL PREDICTION, CENTRAL
PROCESSING UNITS, DIGITAL COMPUTERS, SERIAL
PROCESSORS, SEQUENTIAL (U)
IDENTIFIERS: IBM 360 COMPUTERS, *BLOCKING FACTORS,
PERFORMANCE MONITORING, *SEQUENTIAL FILES,
*COMPUTER PERFORMANCE EVALUATION (U)

THIS REPORT DESCRIBES A PERFORMANCE ENHANCEMENT
STUDY CARRIED OUT TO EXAMINE THE IMPACT OF BLOCKING
FACTORS ON PROGRAM RUN TIME IN A FIXED PARTITION
ENVIRONMENT. INITIAL ANALYSIS IS DESCRIBED TO
DETERMINE BLOCKING FACTOR BEHAVIOR. THE RESULTS OF
THIS ANALYSIS FORMS THE BASIS FOR THE DEVELOPMENT OF
A PERFORMANCE ENHANCEMENT UTILITY ROUTINE TO
AUTOMATICALLY PREDICT THE BEST BLOCKING ASSIGNMENT
FOR TAPE AND SEQUENTIAL DISK FILES TO MINIMIZE
PROGRAM RUN TIME. THE DERIVATION OF THE APPROPRIATE
MATHEMATICAL OPTIMIZATION ALGORITHM AND THE
UNDERLYING ASSUMPTIONS INHERENT IN THE ALGORITHM ARE
EXPLAINED. SUMMARY RESULTS AND TYPICAL TIME SAVINGS
FROM THE USE OF THE ALGORITHM ARE PROVIDED TO
INDICATE THE INCREASE IN RESOURCE UTILIZATION THAT
CAN BE REALIZED FROM IMPLEMENTING THE ROUTINE.
DETAILED PROCEDURES ON HOW TO USE THIS TOOL ARE
ALSO PROVIDED. (AUTHOR)

(U)

D-A031 200

DEFENSE DOCUMENTATION CENTER ALEXANDRIA VA
COMPUTERS IN INFORMATION SCIENCES: COMPUTER COMPONENTS.(U)
OCT 76

F/G 9/2

UNCLASSIFIED

DDC/BIB-76/09

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3 OF 4
AD
A031 200



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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A014 364 9/2 20/12
ROCKWELL INTERNATIONAL CORP ANAHEIM CALIF ELECTRONICS
RESEARCH DIV

EXPLORATORY DEVELOPMENT OF MAGNETIC BUBBLE
DOMAIN MATERIAL FOR APPLICATION IN AIR
FORCE SOLID STATE MASS MEMORY SYSTEMS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 27 NOV 72-30 NOV 74,
MAR 75 98P HEINZ, D. M. IELLIOTT, M.
T. HENRY, R. D. STEARNS, F. S. ;
REPT. NO. C73-4.25/501
CONTRACT: F33615-73-C-5017
PROJ: AF-7371
TASK: 737103
MONITOR: AFML TR-75-12

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *MEMORY DEVICES, *MAGNETIC MATERIALS,
*THIN FILM STORAGE DEVICES, GARNET, GERMANIUM
COMPOUNDS, GALLIUM COMPOUNDS, IRON COMPOUNDS, RARE
EARTH ELEMENTS, MAGNETIC DOMAINS, EPITAXIAL GROWTH,
MAGNETIC RESONANCE, VAPOR DEPOSITION, THIN FILMS,
RADIATION EFFECTS, STRESSES, TEMPERATURE (U)
IDENTIFIERS: *MAGNETIC BUBBLE DOMAINS, *MAGNETIC
FILM MEMORIES, LIQUID PHASE EPITAXY, CHEMICAL
VAPOR DEPOSITION, FERROMAGNETIC RESONANCE (U)

THE OBJECTIVES OF THIS PROGRAM WERE TO DEVELOP
BUBBLE DOMAIN MATERIALS WHICH PERFORM IN A MILITARY
ENVIRONMENT AND MEET DEVICE GOALS OF A BIT DENSITY OF
1M BIT/SQ. IN., A DATA RATE OF 1 MHZ AND AN
OPERATING TEMPERATURE RANGE OF -25 TO 75C. ALL
OF THESE PROGRAM OBJECTIVES HAVE SUBSTANTIALLY BEEN
MET. THE MILITARY ENVIRONMENT WAS CONSIDERED TO
CONSIST OF EXTREMES OF TEMPERATURE, DYNAMIC
MECHANICAL STRESS AND RADIATION. BUBBLE DEVICE
OPERATION OVER THE TEMPERATURE RANGE OF -25 TO 75C
WAS ADDRESSED IN THE DESIGN OF GARNET COMPOSITIONS.
THE EFFECTS OF SHOCK AND VIBRATION WERE EXPLORED ON
BUBBLE DOMAIN GARNET FILMS, AND RESULTS WERE OBTAINED
THAT REVEALED THE ABSENCE OF POTENTIALLY DELETERIOUS
MAGNETOMECHANICAL EFFECTS. RADIATION STUDIES ON A
RELATED PROGRAM WHICH WAS COORDINATED WITH THIS ONE
SHOW THE BUBBLE GARNETS TO BE VERY TOLERANT OF
NUCLEAR RADIATION. THUS BUBBLE DOMAIN GARNET
MATERIALS SHOULD PERFORM SATISFACTORILY IN SUCH AN
ENVIRONMENT.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A014 521 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

ON THE RACE-FREE AND MINIMAL COST CODING
OF THE INTERNAL STATES IN COMPUTER AIDED
DESIGN OF SEQUENTIAL SWITCHING SYSTEMS. ON
THE PROGRAMMING SYSTEM RENDIS-5 FOR THE
DESIGN OF SEQUENTIAL SWITCHING SYSTEMS, (U)

JUL 75 27P HALLBAUER,G. ;HELTZIG,H.
F. ;HUMMITZSCH,P. ;
REPT. NO. FTD-ID(RS)I-1440-74

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MESSEN-STEURN-
REGELN (EAST GERMANY) V17 N3 P95-102 MAR 74.

DESCRIPTORS: *SWITCHING CIRCUITS, *CODING, LOGIC
CIRCUITS, FLIP FLOP CIRCUITS, COMPUTER AIDED DESIGN,
TRANSLATIONS, EAST GERMANY (U)
IDENTIFIERS: LOGIC DESIGN (U)

A NUMBER OF PROPERTIES OF A SEQUENTIAL SWITCHING
SYSTEM DEPEND ON THE CODING OF THE INTERNAL STATES.
THE CODING, FOR EXAMPLE, HAS AN EFFECT ON THE LOGIC
ELEMENT REQUIREMENTS, THE SPEED OF SWITCHING, AND THE
MEMORY REQUIREMENTS. UNCLOCKED SEQUENTIAL SWITCHING
NETWORKS MAY, IN ADDITION, EXHIBIT SO-CALLED RACE
CONDITIONS WHICH RESULT IN FAULTY OPERATION OF THE
NETWORK. THESE RACE CONDITIONS ARE ATTRIBUTABLE TO
THE NON-IDEAL TRANSITION BEHAVIOR OF REAL COMPONENTS.
THE CODING PROCEDURE DESCRIBED IN THE REPORT WAS
PRINCIPALLY DEVISED FOR THE COMPUTER-AIDED DESIGN OF
INDUSTRIAL CONTROLS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A014 758 9/2
CALIFORNIA UNIV LOS ANGELES DEPT OF COMPUTER SCIENCE

THE RENEWAL MODEL FOR PROGRAM BEHAVIOR,

(U)

FEB 74 19P OPPERBECK, H. ; CHU, W. W. ;
CONTRACT: N00014-69-A-0200-4027
PROJ: NR-048-129

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN SIAM JNL. ON COMPUTERS, V4
N3 P356-374 SEP 75.

DESCRIPTORS: *MEMORY DEVICES, *COMPUTER PROGRAMS,
DATA STORAGE SYSTEMS, CENTRAL PROCESSING UNITS,
ADDRESSING, COMPUTER ARCHITECTURE, MODELS,
ALGORITHMS, REPRINTS

(U)

IDENTIFIERS: *VIRTUAL MEMORIES

(U)

A MODEL FOR PROGRAM BEHAVIOR, THE RENEWAL MODEL, IS
INTRODUCED; ITS PROPERTIES ARE DISCUSSED, AND ITS
ABILITY TO MODEL THE BEHAVIOR OF REAL PROGRAMS IS
INVESTIGATED. USING THIS RENEWAL MODEL, SEVERAL
THEOREMS ARE DERIVED WHICH DESCRIBE THE PERFORMANCE
OF THE WORKING SET REPLACEMENT ALGORITHM. THEN THE
RENEWAL MODEL IS USED TO EVALUATE THE PERFORMANCE OF
A REPLACEMENT ALGORITHM FOR TWO-LEVEL DIRECTLY
ADDRESSABLE MEMORY HIERARCHIES. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A014 823 9/2 9/5
AEROSPACE CORP EL SEGUNDO CALIF ENGINEERING SCIENCE
OPERATIONS

MICROPROCESSORS AND MICROCOMPUTERS,

(U)

MAY 75 35P THEIS, DOUGLAS J. ;
REPT. NO. TR-0075(5112)-7
CONTRACT: FO4701-74-C-0075
MONITOR: SAMSO TR-75-206

UNCLASSIFIED REPORT

DESCRIPTORS: *MICROCOMPUTERS, *DATA PROCESSING,
*INTEGRATED CIRCUITS, MEMORY DEVICES, COMPUTER
PROGRAMMING, MICROPROGRAMMING,
CHIPS(ELECTRONICS), PRINTED CIRCUITS,
MICROELECTRONICS, COMPUTER PROGRAMS, RANDOM ACCESS
COMPUTER STORAGE, READ ONLY MEMORIES
IDENTIFIERS: *MICROPROCESSORS, LARGE SCALE
INTEGRATED CIRCUITS

(U)

(U)

AN OVERVIEW OF THE LATEST MICROPROCESSOR AND
MICROCOMPUTER PRODUCTS IS PRESENTED.
MICROPROCESSORS ARE IN FACT THE CENTRAL PROCESSING
UNIT PORTION OF A COMPUTER ON A CHIP. A
MICROPROCESSOR CHIP OR CHIPS TOGETHER WITH MEMORY
CHIPS AND INPUT-OUTPUT CHIPS QUALIFY AS A
MICROCOMPUTER AND ARE AVAILABLE TODAY ON A SINGLE
PRINTED CIRCUIT BOARD. THE ARCHITECTURAL FEATURES
AND THE MICROELECTRONIC TECHNOLOGIES USED TO
IMPLEMENT THESE DEVICES ARE COVERED. THE
MICROPROCESSOR SURVEY INCLUDES 18 DEVICES, AND THE
MICROCOMPUTER SURVEY HAS 28 MACHINES. THE KINDS OF
SOFTWARE NEEDED TO PROGRAM THEM AND SOME FUTURE
TRENDS FOR THESE PRODUCTS ARE DISCUSSED.
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A015 033 9/2
AIR FORCE AERO PROPULSION LAB WRIGHT-PATTERSON AFB
OHIO

A CDC 6600-BASED CROSS-ASSEMBLER FOR THE
HP2114 MINICOMPUTER.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
JUL 75 116P BROWNSTEIN, BARRY J. ;
REPT. NO. AFAPL-TR-75-31

UNCLASSIFIED REPORT

DESCRIPTORS: *MINICOMPUTERS, *ASSEMBLERS,
TURBINES, EXHAUST SYSTEMS, COMPUTER PROGRAM
DOCUMENTATION, PUNCHED TAPE, SHIFT REGISTERS,
MEMORY DEVICES, BINARY NOTATION

(U)

IDENTIFIERS: CDC 6600 COMPUTERS, HP 2114
COMPUTERS, COMPUTER SOFTWARE, *CROSS ASSEMBLERS

(U)

ONE OF THE DIFFICULTIES IN PROGRAMMING A
MINICOMPUTER WITH A MINIMUM COMPLEMENT OF PERIPHERAL
DEVICES IS THE NEED TO USE PAPER TAPE SOFTWARE.
THIS SOFTWARE IS NORMALLY PONDEROUS TO USE,
PROVIDES A MINIMUM OF DIAGNOSTICS, AND VERY LITTLE
LANGUAGE MODIFICATION CAPABILITY. THE CROSS-
ASSEMBLER DESCRIBED IN THIS REPORT RUNS ON THE CDC
6600, USING HIGHER SPEED PERIPHERALS, CARD INPUT, AND
IS USED VERY MUCH LIKE AN ASSEMBLY LANGUAGE FOR A
LARGE COMPUTER SYSTEM, SUCH AS COMPASS.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A015 041 9/2

HARVARD COLL CAMBRIDGE MASS PRESIDENT AND FELLOWS

RESEARCH IN PROGRAM OPTIMIZATION
TECHNIQUES.

(U)

DESCRIPTIVE NOTE: REPT. FOR 1 JUN 74-31 MAY 75,
JUN 75 29P CHEATHAM, THOMAS E. , JR;
CONTRACT: F19628-74-C-0208
MONITOR: ESD TR-75-81

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMMING, *HIGH LEVEL
LANGUAGES, *DATA STORAGE SYSTEMS, COMPILERS,
OPTIMIZATION, COMPUTER PROGRAMS, MACHINE CODING
IDENTIFIERS: COMPUTER APPLICATIONS, STRUCTURED
PROGRAMMING

(U)

(U)

IN THE CONTEXT OF THE ECL PROGRAMMING SYSTEM,
GENERAL TECHNIQUES FOR PROGRAM OPTIMIZATION AT HIGH
LEVELS OF LANGUAGE AND SPECIAL PURPOSE TECHNIQUES TO
ENHANCE USE OF ECL FOR SYSTEMS PROGRAMMING HAVE
BEEN STUDIED. THE SPECIFIC PROBLEMS DISCUSSED ARE
THE EFFICIENT REPRESENTATION OF KNOWLEDGE ABOUT
PROGRAMS, THE USE OF MEASUREMENTS TO GUIDE PROGRAM
IMPROVEMENT, COMPILER OPTIMIZATION UNDER STRICT
RESOURCE CONSTRAINTS AND USER CONTROL OF MACHINE
LEVEL CODE OPTIMIZATIONS SUCH AS REGISTER ASSIGNMENT.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A015 112 9/5 9/3
PRINCETON UNIV N J DEPT OF ELECTRICAL ENGINEERING

A NEW HARDWARE REALIZATION OF DIGITAL
FILTERS,

(U)

FEB 74 8P PELED, ABRAHAM ; LIU, BEDE ;
CONTRACT: AF-AFOSR-2101-71, NSF-GK-24187
PROJ: AF-9749
TASK: 974906
MONITOR: AFOSR TR-75-1265

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN IEEE TRANSACTIONS ON
ACOUSTICS, SPEECH AND SIGNAL PROCESSING, VASSP-22
N6 P456-462 DEC 74.

DESCRIPTORS: *DIGITAL FILTERS, *SIGNAL PROCESSING,
SEMICONDUCTOR DEVICES, REAL TIME, COSTS, POWER,
MEMORY DEVICES, ERRORS, INTEGRATED CIRCUITS,
REPRINTS

(U)

IDENTIFIERS: TRANSISTOR TRANSISTOR LOGIC, LARGE
SCALE INTEGRATION

(U)

A NEW APPROACH TO THE IMPLEMENTATION PROBLEM OF
DIGITAL FILTERS IS PRESENTED. THIS APPROACH
CAPITALIZES ON RECENT ADVANCES IN SEMICONDUCTOR
MEMORY TECHNOLOGY AND IS SHOWN TO OFFER SIGNIFICANT
REDUCTIONS IN COST AND POWER CONSUMPTION FOR THE SAME
SPEED OF OPERATION AS THAT OF EXISTING REALIZATIONS.
FURTHERMORE, THIS APPROACH MAKES POSSIBLE SPEEDS OF
OPERATION WHICH CANNOT BE ACHIEVED BY EXISTING
REALIZATIONS. THIS PROPOSED APPROACH YIELDS A VERY
FLEXIBLE HARDWARE CONFIGURATION AND A DISCUSSION OF
THE VARIOUS OPTIONS IS PRESENTED TOGETHER WITH A
COMPARISON TO EXISTING REALIZATIONS. THE MEAN-
SQUARED ERROR RESULTING FROM THE USE OF FINITE WORD
LENGTH IS ANALYZED. (AUTHOR)

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A015 125 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATA COMPUTER PROJECT.

(U)

DESCRIPTIVE NOTE: SEMI-ANNUAL TECHNICAL REPT. 1 JAN-30
JUN 75.

JUN 75 65P

CONTRACT: MOA-903-74-C-0225, DARPA ORDER-2687

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 31 DEC 74,
AD-A008 877.

DESCRIPTORS: *DATA STORAGE SYSTEMS, *COMMUNICATIONS
NETWORKS, TIME SHARING, COMPILERS, COMPUTER
ARCHITECTURE, ON LINE SYSTEMS, DATA MANAGEMENT

(U)

IDENTIFIERS: *DATA COMPUTER PROJECT, *COMPUTER
NETWORKS, TENEX SYSTEM

(U)

THIS REPORT DESCRIBES THE WORK ON THE
DATA COMPUTER, A NETWORK DATA UTILITY, FROM
JANUARY 1, 1975 TO JUNE 30, 1975. THE WORK IS
DESCRIBED IN DETAIL IN SECTIONS 2-8. SECTION 2 IS
A DISCUSSION OF THE DATA COMPUTER ARCHITECTURE, WITH
EMPHASIS ON THE INCREASING LEVELS OF FUNCTIONAL
ABSTRACTION BEGINNING WITH THE HARDWARE AND MOVING
OUTWARD. SECTION 3 IS A REPORT ON THE USAGE OF THE
DATA COMPUTER DURING THE REPORTING PERIOD, AND A
DISCUSSION OF NEW WORK BEING DONE IN THE USER
SERVICES AND SUPPORT AREA. SECTION 4 IS A DETAILED
DISCUSSION OF THE WORK ON THE DATA COMPUTER SOFTWARE
CARRIED OUT DURING THE PERIOD UNDER DISCUSSION.
MOST OF THE EFFORT WAS CONCENTRATED IN THIS AREA.
SECTION 5 DISCUSSES THE ON-GOING WORK OF
DOCUMENTING THE DATA COMPUTER. SECTION 6 DESCRIBES
PROGRESS MADE IN THE AREA OF DATA COMPUTER HARDWARE
AND OPERATIONAL SUPPORT. SECTION 7 IS A BRIEF
OVERVIEW OF THE NMRO WORK AND ITS IMPLICATIONS FOR
THE DATA COMPUTER IN GENERAL. FINALLY, SECTION
8 IS A CATCH-ALL FOR MINOR BUT IMPORTANT AREAS OF
DATA COMPUTER DEVELOPMENT.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A015 498 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE

DISTINGUISHABLE CODEWORD SETS FOR SHARED
MEMORY,

(U)

DEC 74 10P ELIAS, PETER ;
CONTRACT: DAHCO4-71-C-0039, NSF-GK-37582
MONITOR: ARO 10197.7-EL

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN IEEE TRANSACTIONS ON
INFORMATION THEORY, VIT-21 N4 P392-399 JUL 75.

DESCRIPTORS: *RANDOM ACCESS COMPUTER STORAGE,
*MEMORY DEVICES, *INFORMATION THEORY, CODING,
INEQUALITIES, COMPUTER PROGRAMS, DATA PROCESSING,
REPRINTS
IDENTIFIERS: *CODE WORDS

(U)

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IN DATA PROCESSING, A TRANSMITTER T AND RECEIVER
R COMMUNICATE VIA A RANDOM-ACCESS MEMORY M THAT
THEY SHARE WITH A SET U OF OTHER USERS. T SELECTS
A CODEWORD C FROM A SET C KNOWN TO R AND STORES C
IN SOME OF THE CELLS OF M, NOT NECESSARILY ADJACENT
TO ONE ANOTHER. U DOES NOT CHANGE THE VALUES T
HAS STORED BUT FILLS IN THE VALUES STORED IN THE
OTHER CELLS OF M. C IS SAID TO BE DISTINGUISHABLE
IF R CAN ALWAYS FIND WHICH CODEWORD T STORED IN M
NO MATTER WHAT U STORES IN THE OTHER CELLS AND TO
BE LOCALLY DISTINGUISHABLE IF R CAN DO SO READING
ONLY THE VALUES WRITTEN. (AUTHOR)

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A015 808 9/5 9/2
ILLINOIS UNIV AT URBANA-CHAMPAIGN COORDINATED SCIENCE
LAB

COMPUTER AIDED ANALYSIS OF INTEGRATED
INJECTION LOGIC.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
SEP 75 46P NIEHAUS, JEFFREY ALAN ;
REPT. NO. R-689, UILU-ENG-75-2224
CONTRACT: DAAB07-72-C-0259

UNCLASSIFIED REPORT

DESCRIPTORS: *INTEGRATED CIRCUITS, *LOGIC CIRCUITS,
DIGITAL SYSTEMS, COMPUTERIZED SIMULATION, THESES,
GATES(CIRCUITS), COMPUTER APPLICATIONS (U)
IDENTIFIERS: *INTEGRATED INJECTION LOGIC CIRCUITS,
COMPUTER AIDED ANALYSIS, LARGE SCALE INTEGRATED
CIRCUITS, LOGIC DESIGN, SPICE COMPUTER PROGRAM (U)

INTEGRATED INJECTION LOGIC IS A LOW POWER, HIGH
DENSITY BIPOLAR LOGIC FAMILY. THE SWITCHING SPEED
IS INVERSELY PROPORTIONAL TO THE CURRENT LEVELS USED,
WHICH CAN VARY ANYWHERE FROM THE NA TO MICROAMP
RANGE. SINCE INTEGRATED INJECTION LOGIC IS A
CURRENT SWITCHING LOGIC, IT CAN OPERATE OVER A WIDE
RANGE OF SUPPLY VOLTAGES. BESIDES POSSESSING A LOW
SPEED POWER PRODUCT, IT HAS THE HIGHEST PACKING
DENSITY OF ANY STANDARD LOGIC FAMILY. THE PAPER
COMPARES RESULTS OF DERIVED EQUATIONS WITH CIRCUIT
SIMULATIONS RUN UNDER THE BERKELEY SPICE PROGRAM
ON THE DEC-10 COMPUTER. LOGIC DESIGN WITH THESE
MULTIPLE-OUTPUT, SINGLE-INPUT DEVICES IS ALSO
ANALYZED AND SIMULATED ON THE COMPUTER. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-AD16 137 9/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

SUCCESSFUL INTERNATIONAL TESTING OF JSEP EC
7902 - CZECHOSLOVAK COMPOUND UNIT FOR TAPE
PUNCHING,

(U)

MAY 75 17P VILNER, L. ; KOVARIK, J. ;
KEPKA, M. ;
REPT. NO. FTD-HC-23-1130-75

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF MECHANIZACE,
AUTOMATIZACE ADMINISTRATIVY (USSR) V13 N12 P479-482,
487 1973.

DESCRIPTORS: *INPUT OUTPUT DEVICES, DATA PROCESSING,
TESTS, PUNCHED TAPE, CZECHOSLOVAKIA,
TRANSLATIONS

(U)

;CONTENTS: SUCCESSFUL INTERNATIONAL TESTING OF
JSEP EC 7902 - CZECHOSLOVAK COMPOUND UNIT FOR
TAPE PUNCHING; SERVICE COMPUTER CENTERS
MASCHINELLES RECHNEN IN THE GERMAN DEMOCRATIC
REPUBLIC; INTERNATIONAL TESTING OF THE OUTPUT
COLUMN PUNCHER EC 7014 IN NATIONAL ENTERPRISE
ARITHMA.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-AD16 482 9/2 1/3
TEXAS INSTRUMENTS INC DALLAS

DISTRIBUTED PROCESSOR/MEMORY ARCHITECTURES
DESIGN PROGRAM.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 10 DEC 73-7 DEC 74,
FEB 75 500P CONSOLVER,G. ;ACKLEY,D. ;
RICKARD,M. ;MCAFEY,R. ;SHIPCHANDLER,T. I
CONTRACT: F33615-74-C-1018
PROJ: AF-2003
TASK: 200304
MONITOR: AFAL TR-75-80

UNCLASSIFIED REPORT

DESCRIPTORS: *AVIONICS, *COMPUTER PROGRAMMING,
*CENTRAL PROCESSING UNITS, MEMORY DEVICES,
COMPUTER ARCHITECTURE, LOGIC CIRCUITS, SHIFT
REGISTERS, INTERFACES, COMPUTERIZED SIMULATION,
DATA BASES, COMPUTER PROGRAMS, FORTRAN
IDENTIFIERS: DISTRIBUTED COMPUTER SYSTEMS,
COMPUTER NETWORKS, FAULT TOLERANT COMPUTING

(U)

(U)

THE PURPOSE OF DISTRIBUTED PROCESSOR/MEMORY
ARCHITECTURE (DP/M) DESIGN PROGRAM WAS TO
EXTEND THE DP/M AVIONIC SYSTEM PROCESSING CONCEPT
TO A DETAILED SYSTEM HARDWARE AND SOFTWARE DESIGN.
THE FUNCTIONAL DESIGN FOR THE DP/M PROCESSING
ELEMENT (PE) IS SUMMARIZED, INCLUDING THE
PROCESSOR, MEMORY, INPUT/OUTPUT INTERFACE, AND A
DUAL-LEVEL TIME-DIVISION-MULTIPLEX BUS INTERFACE
UNIT. A SET OF SIMULATION AND ANALYSIS PROGRAMS
WAS DEVELOPED FOR MODELING BOTH THE HIGH-LEVEL
NETWORK INTERACTION AMONG INTERCONNECTED PROCESSING
ELEMENTS AND THE DETAILED INTERNAL OPERATION OF THE
PE. OTHER MAJOR AREAS EXAMINED WERE THE
EXECUTIVE CONTROL SOFTWARE, THE PROCESS CONSTRUCTION
METHODOLOGY REQUIRED TO DEVELOP AND ALLOCATE REAL-
TIME SOFTWARE FOR DP/M, AND METHODS THAT COULD BE
USED WITH DP/M TO PROMOTE AVIONIC SYSTEM FAULT
TOLERANCE.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-AD16 688 9/1 9/2
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

COHERENT INTEGRATION AND CORRELATION IN A
MODIFIED ACOUSTOELECTRIC MEMORY
CORRELATOR.

(U)

DESCRIPTIVE NOTE: JOURNAL ARTICLE,
MAY 75 4P INGEBRIGTSEN, KJELL A. ;
STERN, ERNEST ;
REPT. NO. JA-4824
CONTRACT: F19628-73-C-0002, ARPA ORDER-2006
PROJ: DA-7-X-263304-D-215
MONITOR: ESD TR-75-273

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN APPLIED PHYSICS LETTERS,
V27 N4 P170-172, 15 AUG 75.

DESCRIPTORS: *SCHOTTKY BARRIER DEVICES, *MEMORY
DEVICES, *CORRELATORS, SEMICONDUCTOR DIODES,
ANALOG SIGNALS, ARRAYS, INTEGRATION,
POLYCRYSTALLINE, SILICON, REPRINTS, CHARGE
CARRIERS

(U)

IDENTIFIERS: *ACOUSTOELECTRIC MEMORY
CORRELATORS

(U)

THE STORAGE, CORRELATION, AND COHERENT INTEGRATION
OF ANALOG SIGNALS IN A SCHOTTKY DIODE
ACOUSTOELECTRIC MEMORY CORRELATOR IS DESCRIBED. THE
EXPERIMENTS DEMONSTRATE STORAGE OF PHASE AND
AMPLITUDE OF A 70-MHZ SIGNAL BY THE DISTRIBUTION OF
CHARGE IN AN ARRAY OF SCHOTTKY DIODES. COHERENT
INTEGRATION IS OBTAINED BY ACCUMULATING A SUCCESSION
OF CHARGES IN HIGHLY RESISTIVE POLYCRYSTALLINE
SILICON ISLANDS. COHERENT INTEGRATION OVER A TIME
PERIOD OF SEVERAL TENS OF MILLISECONDS IS REPORTED.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A016 689 9/2 9/5
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

MULTICHIP INTEGRATED CIRCUIT MEMORY WITH
PHOTOFORMED PLATED CONDUCTORS. (U)

DESCRIPTIVE NOTE: JOURNAL ARTICLE,
JUN 74 9P GUDITZ, ELIS A. ; BURKE,
ROBERT L. ;
REPT. NO. JA-4896
CONTRACT: F19628-73-C-0002
PROJ: AF-649L
MONITOR: ESD TR-75-228

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN IEEE TRANSACTIONS ON
PARTS, HYBRIDS, AND PACKAGING, VPHP-11 N2 P89-96
JUN 75.

DESCRIPTORS: *CHIPS(ELECTRONICS), *INTEGRATED
CIRCUITS, *MEMORY DEVICES, PLASTICS, NICKEL,
SUBSTRATES, CIRCUIT INTERCONNECTIONS, REPRINTS (U)
IDENTIFIERS: PHOTOFORMED PLATED CONDUCTORS (U)

A 20-CHIP INTEGRATED CIRCUIT MEMORY HAS BEEN
CONSTRUCTED UTILIZING TECHNIQUES OF PLASTIC
EMBEDMENT, PHOTOFORMATION OF PLASTICS, AND SELECTIVE
ELECTROLESS METAL DEPOSITION PREVIOUSLY REPORTED.
THIS PAPER IS A CONTINUATION AND UPDATE OF THAT
EARLIER WORK. IT HAS BEEN DEMONSTRATED THAT GROUPS
OF PASSIVATED INTEGRATED CIRCUIT CHIPS CAN BE
ACCURATELY PLACED IN ARRAY POSITIONS, EMBEDDED IN
PLASTIC, AND INTERCONNECTED WITH ELECTROLESS NICKEL
CONDUCTORS DEPOSITED IN PHOTOFORMED MULTILAYERED
CONDUCTOR PATHS SEPARATED BY SELECTIVELY PHOTOFORMED
PLASTIC DIELECTRIC LAYERS. THERMAL PATHS OF NICKEL,
PLATED DIRECTLY TO THE BACKS OF THE CHIPS AND TO AN
ADHERED PHOTOETCHED METAL SUBSTRATE, EFFECTIVELY
REMOVE HEAT FROM THE CHIPS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A016 703 9/1 9/2 20/1
MASSACHUSETTS INST OF TECH LEXINGTON LINCOLN LAB

A SCHOTTKY-DIODE ACOUSTIC MEMORY AND
CORRELATOR.

(U)

DESCRIPTIVE NOTE: JOURNAL ARTICLE,
FEB 75 4P INGEBRIDTSEN, KJELL A. ;
COHEN, RONALD A. ; MOUNTAIN, ROBERT W. ;
REPT. NO. JA-4489
CONTRACT: F19628-73-C-0002, ARPA ORDER-600
PROJ: DA-7-X-243304-D-215
MONITOR: ESD TR-75-235

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN APPLIED PHYSICS LETTERS,
V26 N11 P596-598, 1 JUN 75.

DESCRIPTORS: *SCHOTTKY BARRIER DEVICES, *MEMORY
DEVICES, *ACOUSTIC SIGNALS, *CORRELATORS, SURFACE
WAVES, DELAY LINES, MATRICES (CIRCUITS),
SILICON, NIOBATES, REPRINTS
IDENTIFIERS: LITHIUM NIOBATE

(U)

(U)

EXPERIMENTS DEMONSTRATE THAT IMAGES OF ACOUSTIC
SIGNALS CAN BE STORED FOR TENS OF MSEC IN A MATRIX OF
SCHOTTKY DIODES ON A SILICON SURFACE ADJACENT TO A
LITHIUM NIOBATE SURFACE-WAVE DELAY LINE. THE
EXPERIMENTS SHOW CHARGING TIMES OF THE ORDER OF 10
NSEC. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A016 940 9/2 9/1
GENERAL ELECTRIC CORPORATE RESEARCH AND DEVELOPMENT
SCHENECTADY N Y

DESIGN, FABRICATION, AND EVALUATION OF AN
ELECTRON BEAM ADDRESSABLE HIGH INFORMATION
DENSITY MEMORY TUBE.

(U)

DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 1, 1 MAR-30 MAY
75,

OCT 75 35P LEMMOND, C. Q. ; HUGHES, W.
C. ; KIRKPATRICK, C. G. ; POSSIN, G. E. ;
FISHER, J. K. ;

REPT. NO. SRD-75-099
CONTRACT: DAAB07-75-C-1312
PROJ: DA-IS-762705-AH-94-D2
TASK: IS-762705-AH-94-D-205
MONITOR: ECOM 1312-1-75

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, *STORAGE TUBES,
ELECTRON OPTICS, RANDOM ACCESS COMPUTER STORAGE
IDENTIFIERS: COMPUTER STORAGE DEVICES

(U)

(U)

THE TUBE IS TO BE A SEALED-OFF, SELF-CONTAINED UNIT
CONSISTING OF AN ELECTRON SOURCE, THE NECESSARY
ELECTRON OPTICS FOR PERFORMING THE REQUIRED WRITE AND
READ FUNCTIONS, AND A STORAGE STRUCTURE CONTAINING
APPROXIMATELY 1.8×10 TO THE 7TH POWER ELEMENTS.
A RELIABLE AND WELL-ENGINEERED MEMORY TUBE
DEMONSTRATING LIFE AND ENVIRONMENTAL CHARACTERISTICS
ARE OBJECTIVES OF THIS PROGRAM. TWO MEMORY TUBES
ARE THE GOAL OF THE PROGRAM. VIBRATION TESTS WERE
CONDUCTED ON AN ELECTRON BEAM MEMORY TUBE FURNISHED
GENERAL ELECTRIC BY THE U.S. ARMY
ELECTRONICS COMMAND. THESE TESTS WILL DICTATE
DESIGN CHANGES NECESSARY SO THAT AN IMPROVED TUBE
WILL MEET VIBRATIONAL REQUIREMENTS. GENERAL
ELECTRIC HAS MODIFIED ITS MEMORY TEST SYSTEM
FOR TUBE PERFORMANCE TESTS, RFI TESTS AND
TEMPERATURE TESTS. SEVERAL IMPROVEMENTS TO THE
BEAMOS TUBE HAVE BEEN MADE AND ARE DESCRIBED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A016 951 9/2

KANSAS STATE UNIV MANHATTAN DEPT OF COMPUTER SCIENCE

RESEARCH INTO THE DEVELOPMENT OF A LOW-COST
HARDWARE MONITOR.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

JUL 75 271P WALLENTINE,V. ;ANDERSON,G. ;

KELLER,R. ;FISHER,P. ;

CONTRACT: DAHCO4-74-G-0103

MONITOR: USACSC AT-75-07

UNCLASSIFIED REPORT

DESCRIPTORS: *CENTRAL PROCESSING UNITS,
*MINICOMPUTERS, *MONITORS, DATA PROCESSING
TERMINALS, COMPUTER GRAPHICS, LOGIC CIRCUITS,
COMPILERS, COMPUTER PROGRAMMING, COMPUTER
PROGRAMS, FORTRAN

(U)

IDENTIFIERS: *COMPUTER SYSTEMS HARDWARE, *COMPUTER
PERFORMANCE EVALUATION, *COMPUTER HARDWARE MONITORS,
FORTRAN 4 PROGRAMMING LANGUAGE

(U)

THE EFFORT IN PURSUANCE OF THE STATED OBJECTIVE WAS
CONCENTRATED ON THE DESIGN OF THE HARDWARE IN THE
MONITOR, THE DESIGN OF THE SOFTWARE TO CONTROL THE
HARDWARE, AND THE DEVELOPMENT OF A BASIC REPORTING
PACKAGE USEFUL IN ANALYZING THE DATA COLLECTED.
THE DESIGN OBJECTIVES OF THE HARDWARE MONITOR AND
THE SOFTWARE INTERFACE BETWEEN THE MONITOR AND THE
ANALYST WERE AS FOLLOWS: (1) TO PROVIDE ALL
THE CAPABILITIES OF THOSE CURRENTLY AVAILABLE ON THE
COMMERCIAL MARKET; (2) TO PROVIDE THE
MEASUREMENT ANALYST A MORE FLEXIBLE MEASUREMENT TOOL
WITH WHICH TO EXPLORE NEW MEASUREMENTS AND THEIR
CORRELATIONS BEFORE INVESTING THE TIME AND EFFORT TO
MANUALLY SET THE LOGIC FOR DESIRED MEASUREMENTS;
(3) TO DEVELOP A MEASUREMENT FRONT-END FOR A
CENTRAL PROCESSING SYSTEM (MINICOMPUTER) WHICH
COULD BE USED TO MONITOR A LARGE RANGE OF SUBJECT
SYSTEMS (TO PROVIDE A DEVICE CAPABLE OF TRACKING AT
NANOSECOND SPEED AS WELL AS MILLISECOND SPEED; (4)
TO PROVIDE AN AUTOMATED METHOD OF ESTABLISHING (A
LEVEL OF) CORRECTNESS OF THE MEASUREMENT (DATA)
COLLECTED; (5) TO RELIEVE THE MEASUREMENT ANALYST
OF DETAILED CONTROL OF THE HARDWARE MONITOR AND
PERMIT HIM TO CONCENTRATE MORE INTENTLY ON THE
MEASUREMENT EXPERIMENT.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A017 313 9/5
GENERAL ELECTRIC CO PITTSFIELD MASS

DIGITAL MICROCIRCUIT CHARACTERIZATION AND
SPECIFICATION, VOLUME I.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. FEB 74-MAR 75,
AUG 75 262P OSTROWSKI, THOMAS M. ;
CONTRACT: F30602-74-C-0159
PROJ: AF-5519
TASK: 551904
MONITOR: RADC TR-75-216-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-A017 314.

DESCRIPTORS: *MICROCIRCUITS, *INTEGRATED CIRCUITS,
TEST METHODS, RELIABILITY(ELECTRONICS),
SPECIFICATIONS, DIGITAL SYSTEMS, LOGIC CIRCUITS (U)

THE OBJECTIVE OF THE EFFORT WAS TO REVIEW PROPOSED
MIL-M-38510 DIGITAL INTEGRATED CIRCUIT DETAIL
SPECIFICATIONS FOR TECHNICAL ACCURACY, COMPLETENESS
AND CONFORMANCE TO ESTABLISH MILITARY STANDARDS.
THIS INCLUDED WORST CASE TEST SITUATIONS, CRITICAL
TIMING PATHS AND GENERATION OF SPECIAL SCREENING
PROCEDURES. COMPREHENSIVE LABORATORY
INVESTIGATIONS WERE CONDUCTED ON LOW POWER SCHOTTKY
DEVICES AND STANDARD SCHOTTKY VOLTAGE BREAKDOWN
MODES TO OBTAIN DATA. THE LOW POWER SCHOTTKY
STUDY INCLUDED DC, SWITCHING AND FUNCTIONAL
CHARACTERISTICS, VENDOR COMPARISONS, SPECIFICATION
GUIDELINES AND DESIGN RULES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A017 314 9/5 14/4
GENERAL ELECTRIC CO PITTSFIELD MASS

DIGITAL MICROCIRCUIT CHARACTERIZATION AND
SPECIFICATION. VOLUME II AND III.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. FEB 74-MAR 75,
AUG 75 254P OSTROWSKI, THOMAS M. ;

CONTRACT: F30602-74-C-0159

PROJ: AF-5519

TASK: 551904

MONITOR: RADC TR-75-216-VOL-2/3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME I, AD-A017
313.

DESCRIPTORS: *MICROCIRCUITS, *INTEGRATED CIRCUITS,
TEST METHODS, RELIABILITY(ELECTRONICS),
SPECIFICATIONS, DIGITAL SYSTEMS, LOGIC CIRCUITS

(U)

THE VOLUME CONSISTS OF LOGIC INTEGRITY TEST (LIT)
REPORTS FOR TESTS GENERATED FOR THE INTEGRATED
CIRCUIT DEVICES LISTED IN THE INDEX. ALL OF THE
TESTS ARE FOR DEVICES THAT EITHER ARE ALREADY
INCLUDED IN MIL-M-38510 SLASH SHEETS OR ARE TO BE
INCLUDED IN FUTURE SLASH SHEETS. LIT'S WERE
GENERATED FOR TTL, STTL AND CMOS FAMILY TYPES.
FOR THE CMOS DEVICES, ADDITIONAL TESTS WERE
GENERATED TO CHECK FOR WORST CASE LEAKAGE PATHS.
AS A PART OF THE TEST GENERATIONS, THE TESTS WERE
PROVED BY TESTING REPRESENTATIVE DEVICES. IN SOME
INSTANCES LIT'S WERE SUBMITTED BY INTEGRATED
CIRCUIT MANUFACTURERS WHERE UPON THEY WERE CHECKED
FOR ACCURACY AND COMPLETENESS AND THEN WERE EDITED,
UPDATED AND PROOF TESTED.

(U)

UNCLASSIFIED

DNC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A017 509 14/5 9/2
STANFORD RESEARCH INST MENLO PARK CALIF

INVESTIGATION OF A PHOTODICHROIC MATERIAL FOR
HOLOGRAPHIC STORAGE AND RECOVERY.

(U)

DESCRIPTIVE NOTE: ANNUAL TECHNICAL REPT. SEP 74-JUL
75.

AUG 75 40P LEHMANN, MATT IMAGEE, THOMAS
J. IARMISTEAD, R. A. ;
CONTRACT: N00014-72-C-0260
PROJ: SRI-PYU-1777

UNCLASSIFIED REPORT

DESCRIPTORS: *HOLOGRAPHY, *PHOTOGRAPHIC MATERIALS,
*CRYSTAL STRUCTURE, *MEMORY DEVICES, *OPTICAL
STORAGE, ALKALI METALS, HALIDES, SODIUM,
FLUORIDES, INPUT OUTPUT DEVICES, TEMPERATURE
CONTROL

(U)

IDENTIFIERS: PHOTODICHROIC MATERIALS,
NONDESTRUCTIVE READOUT, HIGH DENSITY OPTICAL
MEMORY, ALKALI HALIDES, *HOLOGRAPHIC INFORMATION
STORAGE, OPTICAL CRYSTAL MEMORIES, PHOTOCHROMIC
STORAGE SYSTEMS

(U)

THIS REPORT DESCRIBES THE EXPERIMENTAL EFFORTS TO
EVALUATE THE INFLUENCE OF SURFACE DEFECTS,
TEMPERATURE, AND ACCELERATED FATIGUE TESTS CYCLING ON
THE PROPERTIES OF THE ION-IMPLANTED DEVICE STRUCTURES
AND HOLOGRAPHIC STORAGE AND RECOVERY.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A018 213 9/1 20/12
CALIFORNIA UNIV LOS ANGELES SCHOOL OF ENGINEERING AND
APPLIED SCIENCE

LONG TERM MEMORY IN JUNCTION DEVICES
USING MULTIVALENT TRAPPING IMPURITIES IN
SILICON.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 FEB-30 JUN 75,
OCT 75 127P DOMINGO, GEORGE ; HOLM-
KENNEDY, JAMES W. ; KINGSLEY, WILLIAM ; NASH,
JAMES G. ;

REPT. NO. UCLA-ENG-7575
CONTRACT: DAAB07-73-C-0306
PROJ: DA-1-S-762705-AH-94-R
TASK: 1-S-762705-AH-94-R-3
MONITOR: ECOM 73-0306-F

UNCLASSIFIED REPORT

DESCRIPTORS: *SCHOTTKY BARRIER DEVICES,
*SEMICONDUCTOR DIODES, *SEMICONDUCTOR JUNCTIONS,
TRAPPING (CHARGED PARTICLES), IMPURITIES,
EPITAXIAL GROWTH, SILICON, SWITCHING, WAFERS,
ZINC, ELECTRONS, ETCHING, MEMORY DEVICES,
VALENCE, DOPING

(U)

IDENTIFIERS: *FIELD INDUCED TRAPPING, *SCOTTKY
DIODES, CHARGE STORAGE

(U)

VARIOUS MULTIVALENT DOPANTS WERE INVESTIGATED WITH
THE GOAL OF OBTAINING NONVOLATILE MULTILEVEL MEMORY
DEVICES IN SILICON USING THE FIELD INDUCED
TRAPPING (FIT) EFFECT. THE TEST STRUCTURES
INCLUDED SCHOTTKY DIODES AND RESISTIVE BARS
FABRICATED IN SILICON SUBSTRATES SUITABLY DOPED WITH
MULTIVALENT DOPANTS. NOVEL DEVICE EFFECTS WERE
OBSERVED AND ARE DESCRIBED. A MODEL FOR A NEGATIVE
DIFFERENTIAL RESISTANCE SCHOTTKY BARRIER OSCILLATOR
IS PROPOSED. OSCILLATIONS WITH FREQUENCIES VOLTAGE
TURNABLE OVER THREE DECADES WERE OBSERVED. THERMAL
SWITCHING IN RESISTIVE BARS IS DESCRIBED AND A
THEORETICAL TREATMENT PRESENTED. TWO SEPARATE
MODELS EMPLOYING ENTIRELY DIFFERENT MECHANISMS ARE
ANALYZED. A THEORETICAL TREATMENT ON TRAPPING
EFFECTS IN P-N JUNCTIONS UNDER LOW INJECTION
CONDITIONS IS PRESENTED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A018 341 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

A MULTIPROCESSOR DESIGN.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
OCT 75 284P BARKER, W. B. ;
REPT. NO. BBN-3126
CONTRACT: DAHC15-69-C-0179, F08606-73-C-0027
PROJ: ARPA ORDER-2351

UNCLASSIFIED REPORT

DESCRIPTORS: *MULTIPROCESSORS, *COMPUTER
ARCHITECTURE, FAULT TOLERANT COMPUTING, PARALLEL
PROCESSORS, MEMORY DEVICES, COST EFFECTIVENESS,
RELIABILITY(ELECTRONICS), ALGORITHMS, DIGITAL
COMPUTERS, COSTS, POWER

(U)

IDENTIFIERS: DESIGN, PLURIBUS COMPUTERS, CDC
6600 COMPUTERS, COMPUTER SOFTWARE, ILLIAC 4
COMPUTERS

(U)

THIS REPORT ADDRESSES THE ISSUES INVOLVED IN THE
DESIGN OF A MULTIPROCESSOR. THE AUTHOR EXPLORES A
WIDE RANGE OF DESIGN CONSIDERATIONS AND ARRIVES AT
JUDGMENTS OF RELATIVE MERIT AT EACH DECISION POINT;
THE RESULTS OF THESE DECISIONS LEAD TO A PARTICULAR
MULTIPROCESSOR DESIGN. A REAL MULTIPROCESSOR HAS
BEEN BUILT TO THIS DESIGN, AND ITS CONFIGURATION AND
PERFORMANCE ARE DESCRIBED. THIS SYSTEM, THE
PLURIBUS, HAS MANY ADVANTAGES OVER OTHER COMPUTER
SYSTEMS IN COST-EFFECTIVENESS, RELIABILITY,
MODULARITY, AND EXPANSIBILITY. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A018 678 9/2
MARYLAND UNIV COLLEGE PARK DEPT OF COMPUTER SCIENCE

PDP 11/UNIVAC 1108 CROSS ASSEMBLER
SYSTEM.

(U)

DESCRIPTIVE NOTE: INTERIM TECHNICAL REPT.,
OCT 75 42P LAY, W. M. ; STEBBENS, A.
K. ; POLLIZZI, J. A. ;
REPT. NO. TR-422
CONTRACT: N00014-67-A-0239-0032

UNCLASSIFIED REPORT

DESCRIPTORS: *ASSEMBLERS, *PROGRAMMING MANUALS,
COMPUTER PROGRAMMING, MINICOMPUTERS, USER NEEDS,
COMPUTER FILES, PUNCHED TAPE, DATA STORAGE
SYSTEMS, SYMBOLS, MODES, COMPUTER ARCHITECTURE,
MACROPROGRAMMING

(U)

IDENTIFIERS: PDP 11 COMPUTERS, UNIVAC 1100 SERIES
COMPUTERS

(U)

THIS REPORT IS A USER'S MANUAL FOR THE PDP11
CROSS ASSEMBLER AND CROSS LINK-EDITOR WHICH RUNS AS
THE UNIVAC 1100-SERIES MACHINES. THESE PROGRAMS
ARE DESIGNED TO ACCEPT SOURCE PROGRAMS IN THE SAME
FORMAT AS THE DEC PROGRAMS WHICH RUN ON THE
PDP11, BUT WITH CERTAIN MINOR CHANGES. OBJECT
MODULES PRODUCED BY THESE PROGRAMS IN FILES ON THE
UNIVAC SYSTEM, PUNCHED ON PAPER TAPE OR TRANSMITTED
DIRECTLY TO A PDP11 CONNECTED VIA A DATA SET.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A018 734 9/2
MARYLAND UNIV COLLEGE PARK DEPT OF COMPUTER SCIENCE

AN OVERVIEW OF THE DISTRIBUTED COMPUTER
NETWORK.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
OCT 75 67P MILLS, DAVID L. ;
REPT. NO. TR-413
CONTRACT: N00014-67-A-0239-0032, NSF-GK-41602

UNCLASSIFIED REPORT

DESCRIPTORS: *DIGITAL COMPUTERS, *NETWORKS, MEMORY
DEVICES, MINICOMPUTERS, COMPUTER ARCHITECTURE,
MAGNETIC DISKS, INTERACTIVE GRAPHICS, COMPILERS,
COMPUTER FILES, FORTRAN, PROGRAMMING LANGUAGES,
COMPUTER PROGRAM DOCUMENTATION, RESOURCE MANAGEMENT,
MULTIPROCESSORS (U)

IDENTIFIERS: *COMPUTER NETWORKS, *DISTRIBUTED
NETWORKS, PDP 11 COMPUTERS, DISK STORAGE, UNIVAC
1100 SERIES COMPUTERS, COMPUTER SOFTWARE, VIRTUAL
MEMORY (U)

THE DISTRIBUTED COMPUTER NETWORK (DCN) IS A
RESOURCE-SHARING COMPUTER NETWORK WHICH INCLUDES A
NUMBER OF DEC PDP11 COMPUTERS. THE DCN
SUPPORTS A NUMBER OF PROCESSES IN A MULTIPROGRAMMED
DISTRIBUTED ENVIRONMENT. PROCESSES CAN COMMUNICATE
WITH EACH OTHER AND INTERFACE WITH THEIR ENVIRONMENT
IN A MANNER WHICH IS INDEPENDENT OF THEIR RESIDENCE
WITHIN A PARTICULAR COMPUTER. RESOURCES SUCH AS
PROCESSORS, DEVICES AND STORAGE MEDIA CAN BE REMOTELY
ACCESSED AND SHARED SO AS TO PROVIDE INCREASED
RELIABILITY, FLEXIBILITY AND SYSTEM UTILIZATION.
THE DCN NOW SUPPORTS SEVERAL PROGRAMMING
LANGUAGES AND APPLICATIONS PACKAGES. COMMON
PROGRAMMING LANGUAGES SUCH AS LISP, BASIC AND
OTHERS, ALONG WITH AN EXTENSIVE LIBRARY OF
INTERACTIVE GRAPHICS PROCEDURES, CAN BE EXECUTED IN
PROCESSES WHICH TAKE FULL ADVANTAGE OF THE
DISTRIBUTED ARCHITECTURE OF THE SYSTEM. MOST OF THE
COMPONENTS OF THE DISK OPERATING SYSTEM (DOS)
FOR THE PDP11 CAN BE EXECUTED IN A SPECIAL
EMULATOR-TYPE VIRTUAL PROCESS NOW BEING CONSTRUCTED
FOR THIS PURPOSE. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A018 735 14/5 17/8 9/2
RCA LABS PRINCETON N J

SIGNAL/NOISE RATIO OF HOLOGRAPHIC
IMAGES.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 24 JUN-23 SEP 75,
OCT 75 33P BURKE, W. J. I
REPT. NO. PRRL-75-CR-66
CONTRACT: N00019-75-M-0494

UNCLASSIFIED REPORT

DESCRIPTORS: *HOLOGRAPHY, *DATA STORAGE SYSTEMS,
*IMAGES, *HOLOGRAMS, *SIGNAL TO NOISE RATIO,
IRON, DOPING, CROSSTALK, SCANNING,
PHOTOMULTIPLIER TUBES, SPECTRUM ANALYZERS,
MEASUREMENT, GRAPHICS
IDENTIFIERS: IMAGE SLICERS

(U)

(U)

THIS REPORT DESCRIBES THE RESULTS OF THE CURRENTLY
OBTAINABLE SIGNAL/NOISE (S/N) RATIO OF IMAGES
READOUT FROM THICK PHASE HOLOGRAMS STORED IN IRON-
DOPED LINBO3. USING MULTIPLE OBJECT BEAM
ILLUMINATION AN S/N RATIO OF APPROXIMATELY 27
DB WAS MEASURED FOR A WHITE FIELD. NO SIGNIFICANT
DECREASE IN THE MEASURED S/N RATIO WAS OBSERVED
WITH THE INCREASING NUMBER OF HOLOGRAMS STORED.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A019 050 9/2
COMPUTER SCIENCES CORP PHOENIX ARIZ

RADCOLS COMPUTER SIMULATION MODEL OVERALL
SYSTEMS SPECIFICATION. VOLUME 1.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. JUN 74-JUN 75,
SEP 75 338P BRAUN, VTHOR ;
CONTRACT: F30602-74-C-0281
MONITOR: RADC TR-75-230-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A019
051.

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *COMPUTER
PROGRAMMING, *INFORMATION SYSTEMS, SYSTEMS ANALYSIS,
TIME SHARING, COMPILERS, DATA BASES,
COMPUTERIZED SIMULATION, MATHEMATICAL MODELS,
MATHEMATICAL LOGIC, QUEUEING THEORY, INTERFACES,
SPECIFICATIONS

(U)

IDENTIFIERS: SIMSCRIPT 2.5 PROGRAMMING LANGUAGE,
HONEYWELL 600/6000 COMPUTERS, *COMPUTER SYSTEMS
HARDWARE, OPERATING SYSTEMS (COMPUTERS),
*COMPUTER PERFORMANCE EVALUATION, RADCOLS
MODEL

(U)

THE RADCOLS (ROME AIR DEVELOPMENT CENTER ON
LINE SIMULATOR) MODEL IS A SYSTEM WHICH
SIMULATES A HONEYWELL INFORMATION SYSTEM 600
OR 6000 COMPUTER COMPLETE WITH ITS GCOS (GENERAL
COMPREHENSIVE OPERATING SYSTEM) OPERATING
SYSTEM. THE MODEL EXECUTES ON A HIS 600/6000
SYSTEM UNDER GCOS AND IS WRITTEN IN SIMSCRIPT
2. 5. THE PRIMARY PURPOSE OF THE RADCOLS MODEL
IS TO PROVIDE AN EXPERIMENTER WITH A TOOL BY WHICH HE
MAY REASONABLY PREDICT THE EFFECT OF PROPOSED
HARDWARE, SOFTWARE AND WORK LOAD CHANGES.
REPRESENTATION OF THE GCOS MULTI-DIMENSIONAL
PHILOSOPHY HAS BEEN THE PRIMARY DESIGN GOAL OF
RADCOLS. THE EXPERIMENTER IS PERMITTED TO
INTRODUCE INPUT TO THE MODEL WHICH PORTRAYS A
SPECIFIED WORK LOAD ON THE SYSTEM. JOB GENERATION
IS ACCOMPLISHED WITHIN THE MODEL VIA DISTRIBUTION
FACTORS SUBMITTED AS INPUTS UNDER EACH (LOCAL
BATCH, REMOTE BATCH, AND TSS) WORK LOAD
CATEGORY. THE MODEL HAS BEEN DESIGNED TO GENERATE
FOUR SPECIFIC REPORT TYPES: FACILITY
UTILIZATION, PROCESS DELAY, QUEUE BEHAVIOR,
AND TASK TURNAROUND.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-AD19 051 9/2
COMPUTER SCIENCES CORP PHOENIX ARIZ

RADCOLS COMPUTER SIMULATION MODEL OVERALL
SYSTEMS SPECIFICATION. VOLUME II. FLOW
CHARTS. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. JUN 74-JUN 75,
SEP 75 302P BRAUN,VTHOR I
CONTRACT: F30602-74-C-0281
MONITOR: RADC TR-75-230-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *COMPUTER
PROGRAMMING, *INFORMATION SYSTEMS, FLOW CHARTING,
SYSTEMS ANALYSIS, TIME SHARING, COMPILERS, DATA
BASES, COMPUTERIZED SIMULATION, MATHEMATICAL MODELS,
MATHEMATICAL LOGIC, QUEUEING THEORY, INTERFACES (U)
IDENTIFIERS: SIMSCRIPT 2.5 PROGRAMMING LANGUAGE,
HONEYWELL 600/6000 COMPUTERS, *COMPUTER SYSTEMS
HARDWARE, OPERATING SYSTEMS(COMPUTERS),
*COMPUTER PERFORMANCE EVALUATION, RADCOLS
MODEL (U)

THE RADCOLS (ROME AIR DEVELOPMENT CENTER ON
LINE SIMULATOR) MODEL IS A SYSTEM WHICH
SIMULATES A HONEYWELL INFORMATION SYSTEM 600 OR
6000 COMPUTER COMPLETE WITH ITS GCOS OPERATING
SYSTEM. THE MODEL EXECUTES ON A HIS 600/6000
SYSTEM UNDER GCOS AND IS WRITTEN IN SIMSCRIPT
2, 5. THE PRIMARY PURPOSE OF THE RADCOLS MODEL
IS TO PROVIDE AN EXPERIMENTER WITH A TOOL BY WHICH HE
MAY REASONABLY PREDICT THE EFFECT OF PROPOSED
HARDWARE, SOFTWARE AND WORK LOAD CHANGES.
REPRESENTATION OF THE GCOS MULTI-DIMENSIONAL
PHILOSOPHY HAS BEEN THE PRIMARY DESIGN GOAL OF
RADCOLS. THE EXPERIMENTER IS PERMITTED TO
INTRODUCE INPUT TO THE MODEL WHICH PORTRAYS A
SPECIFIED WORK LOAD ON THE SYSTEM. JOB GENERATION
IS ACCOMPLISHED WITHIN THE MODEL VIA DISTRIBUTION
FACTORS SUBMITTED AS INPUTS UNDER EACH (LOCAL
BATCH, REMOTE BATCH, AND TSS) WORK LOAD
CATEGORY. THE MODEL HAS BEEN DESIGNED TO GENERATE
FOUR SPECIFIC REPORT TYPES: FACILITY
UTILIZATION, PROCESS DELAY, QUEUE BEHAVIOR,
AND TASK TURNAROUND. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A019 052 9/2
COMPUTER SCIENCES CORP PHOENIX ARIZ

RADCOLS COMPUTER SIMULATION MODEL OVERALL
SYSTEMS SPECIFICATION. VOLUME III. USERS
MANUAL.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. JUN 74-JUN 75,
SEP 75 106P BRAUN,VTHOR ;
CONTRACT: F30602-74-C-0261
MONITOR: RADC TR-75-230-VOL-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A019
051.

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *COMPUTER
PROGRAMMING, *INFORMATION SYSTEMS, INSTRUCTION
MANUALS, SYSTEMS ANALYSIS, TIME SHARING,
COMPILERS, DATA BASES, COMPUTERIZED SIMULATION,
MATHEMATICAL MODELS, MATHEMATICAL LOGIC, QUEUEING
THEORY, INTERFACES

(U)

IDENTIFIERS: SIMSCRIPT 2.5 PROGRAMMING LANGUAGE,
HONEYWELL 600/6000 COMPUTERS, *COMPUTER SYSTEMS
HARDWARE, OPERATING SYSTEMS(COMPUTERS),
*COMPUTER PERFORMANCE EVALUATION, RADCOLS
MODEL

(U)

THE OBJECTIVE OF THIS USERS MANUAL FOR THE
RADCOLS COMPUTER SIMULATION MODEL IS TO PROVIDE
THE USER PERSONNEL WITH THE INFORMATION NECESSARY TO
EFFECTIVELY USE THE MODEL. THIS MANUAL IS
APPLICABLE TO THREE CLASSES OF USERS:
EXPERIMENTERS, MODEL DEVELOPERS, AND MODEL
MAINTAINERS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A019 059 9/2 20/1
CALIFORNIA UNIV BERKELEY DEPT OF ELECTRICAL ENGINEERING
AND COMPUTER SCIENCES

EXTRACTION OF DERIVATIVES FROM DATA STORED IN
AN ACOUSTIC MEMORY, (U)

FEB 75 SP HSU, TZU-HWA ; WHITE, RICHARD
M. ;
CONTRACT: DAHCO4-74-G-0205
MONITOR: ARO 5718.14-EL

UNCLASSIFIED REPORT

AVAILABILITY: PUB. IN IEEE TRANSACTIONS ON
SONICS AND ULTRASONICS, VSU-22 N5 P355-358 SEP
75.

DESCRIPTORS: *DATA STORAGE SYSTEMS, *ACOUSTIC WAVES,
*SURFACE WAVES, PIEZOELECTRIC CRYSTALS,
EXTRACTION, WAVEFORMS, PROPAGATION, REPRINTS (U)
IDENTIFIERS: *SURFACE ACOUSTIC WAVES, *ACOUSTIC
MEMORIES (U)

SIMPLE MEANS ARE PROPOSED AND ANALYZED FOR THE
EXTRACTION OF OUTPUTS PROPORTIONAL TO THE DERIVATIVES
OF DATA SAMPLES STORED IN THE FORM OF SURFACE
ACOUSTIC WAVES PROPAGATING ON A PIEZOELECTRIC
CRYSTAL. EXTRACTION OF THE DERIVATIVES IS DONE BY
SIMPLY-SHAPED ELECTRODE TRANSDUCERS. A SIMPLE
PRINCIPLE IS PRESENTED TO PREDICT THE DERIVATIVE
OUTPUTS FOR VARIOUS SURFACE ACOUSTIC WAVEFORMS.
COMPUTER ANALYSIS OF THE DEVICES YIELDS TIME
RESPONSES REVEALING THE DIFFERENCES BETWEEN ADJACENT
DATA ELEMENTS WITH RESOLUTIONS AS HIGH AS 30 DB.
COMPARISON WITH EXPERIMENTAL RESULTS IS ALSO MADE.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-AD19 202 9/2 12/1
MICHIGAN UNIV ANN ARBOR SYSTEMS ENGINEERING LAB

A STUDY OF INFORMATION IN MULTIPLE-COMPUTER
AND MULTIPLE-CONSOLE DATA PROCESSING
SYSTEMS.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 1 JUL 72-30
SEP 75.

NOV 75 44P IRANI, K. B. ; BAUER, M. F.
; MULLA, J. ; MITOMA, M. F. ; SONNENBURG, C. R. ;
CONTRACT: F30602-73-C-0001
PROJ: AF-5581
TASK: 558102
MONITOR: RADC TR-75-276

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA PROCESSING, *MATHEMATICAL MODELS,
INFORMATION PROCESSING, PARALLEL PROCESSORS, DATA
BASES, COMPUTER PROGRAM DOCUMENTATION, ON LINE
SYSTEMS, PROGRAMMING LANGUAGES, TIME SHARING,
MEMORY DEVICES, ASSOCIATIVE PROCESSING

(U)

IDENTIFIERS: COMPUTER HARDWARE, COMPUTER
SOFTWARE

(U)

THIS FINAL REPORT SUMMARIZES THE ACHIEVEMENTS FROM
1 JUL 72 TO 30 SEP 75 OF CONTINUING RESEARCH FOR
THE DEVELOPMENT AND APPLICATION OF MATHEMATICAL
TECHNIQUES FOR THE ANALYSIS AND OPTIMIZATION OF
COMPUTER SYSTEMS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A019 334 9/2
UNIVERSITY OF SOUTHERN CALIFORNIA MARINA DEL REY
INFORMATION SCIENCES INST

A KNOWLEDGEABLE, LANGUAGE-INDEPENDENT SYSTEM
FOR PROGRAM CONSTRUCTION AND MODIFICATION. (U)

DESCRIPTIVE NOTE: RESEARCH REPT.,
OCT 75 68P YONKE, MARTIN D. I
REPT. NO. ISI/RR-75-42
CONTRACT: DAHC15-72-C-0308, ARPA ORDER-2223

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMMING, *PROGRAMMING
LANGUAGES, SYSTEMS ANALYSIS, SYNTAX, SEMANTICS,
ALGORITHMS (U)
IDENTIFIERS: *COMPUTER PROGRAM RELIABILITY, LOGIC
DESIGN, STRUCTURED PROGRAMMING, PARSING (U)

THE NEED OF A LANGUAGE-INDEPENDENT PROGRAMMING
ENVIRONMENT WITH KNOWLEDGEABLE FACILITIES IS
EXPlicated. THEN THE DESIGN OF A LANGUAGE-
INDEPENDENT SYSTEM FOR 'INTELLIGENT' CREATION AND
MODIFICATION OF PROGRAMS AS AN EXAMPLE OF SUCH A
FACILITY. THIS SYSTEM, CALLED THE PROGRAM
CONSTRUCTOR AND MODIFIER, IS A TWO-STAGE PROCESS.
IN THE FIRST STAGE, AN 'EXPERT' CREATES A
DESCRIPTION OF A PROGRAMMING LANGUAGE IN A HIGH-LEVEL
FORMALISM. THIS DESCRIPTION IS USED IN CONJUNCTION
WITH THE UNDERLYING MODEL OF PROGRAMMING LANGUAGES TO
DRIVE THE SECOND STAGE, IN WHICH THE GENERAL USER
CREATES AND MODIFIES PROGRAMS WRITTEN IN THE
PARTICULAR PROGRAMMING LANGUAGE. THIS MODEL WILL
GUARANTEE THAT THROUGHOUT THE INTERACTION THE PROGRAM
IS SYNTACTICALLY ERROR-FREE AND -- AS FAR AS POSSIBLE
WITHOUT EXECUTING THE PROGRAM -- WILL GUARANTEE
CERTAIN SEMANTIC CONSISTENCIES. ALL METHODS
ASSOCIATED WITH THIS MODEL ARE ORIENTED TOWARDS ERROR
PREVENTION WHILE STILL ALLOWING THE USER 'FREE-FORM'
PROGRAM INPUT. THESE METHODS WILL ALSO
AUTOMATICALLY CORRECT CERTAIN CLASSES OF ERRORS SUCH
AS MISSPELLED WORDS AND OMITTED TERMINAL SYMBOLS OF
CERTAIN TYPES AND WILL INTERACT WITH THE USER TO GAIN
INFORMATION WHEN THERE IS INSUFFICIENT KNOWLEDGE FOR
AUTOMATIC CORRECTION. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A019 661 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER
SCIENCE

SEMANTIC MODELS FOR PARALLEL SYSTEMS.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
JAN 75 34P COHEN, ELLIS S. I
CONTRACT: F44620-73-C-0074, ARPA ORDER-2466
MONITOR: AFOSR TR-75-1675

UNCLASSIFIED REPORT

DESCRIPTORS: *PARALLEL PROCESSING, *PARALLEL
PROCESSORS, *PROGRAMMING LANGUAGES, SEMANTICS,
COMPUTER PROGRAMMING, MODELS, SCHEDULING,
PROTECTION

(U)

THIS PAPER PRESENTS A SEMANTIC MODEL FOR PARALLEL
SYSTEMS WITH A SCHEDULING MECHANISM THAT IS USEFUL
FOR EXPRESSING AND PROVING A WIDER RANGE OF
PROPERTIES THAN SEMANTIC MODELS WHICH DO NOT CONSIDER
SCHEDULING. WE FORMALLY DESCRIBE A NUMBER OF
PROPERTIES RELATED TO SCHEDULING AND DEADLOCK,
INCLUDING 'FAIRNESS' AND 'FULLNESS', AND SHOW
THAT SCHEDULERS WITH THESE PROPERTIES BEHAVE IN
DESIREABLE WAYS. LASTLY, WE PROVE AND CONJECTURE
SOME PROOF RULES FOR SCHEDULED SYSTEMS AND OUTLINE
BRIEFLY THE RELATION OF THIS WORK TO MODELLING
PROTECTION IN PARALLEL SYSTEMS. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A019 897 8/11 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATACOMPUTER SUPPORT OF SEISMIC DATA
ACTIVITY.

(U)

DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT. 1 MAY-31
JUL 75.

JUL 75 19P

CONTRACT: MDA903-74-C-0227, ARPA ORDER-2613

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 30 MAY 75,
AD-A010 556.

DESCRIPTORS: *SEISMIC DATA, *DATA PROCESSING,
*DATA STORAGE SYSTEMS, INFORMATION RETRIEVAL,
COMPUTER PROGRAMMING, COMMUNICATIONS NETWORKS,
INTERFACES

(U)

IDENTIFIERS: ARPA COMPUTER NETWORK, COMPUTER
NETWORKS, SEISMIC INPUT PROCESSORS

(U)

THE PURPOSE OF THIS PROJECT IS TO SUPPORT THE
ARPA-NMRO SEISMIC DATA ACTIVITY BY PROVIDING
DATA STORAGE AND RETRIEVAL SERVICES. THE ARPANET
WILL BE USED AS THE PRIMARY COMMUNICATIONS CHANNEL.
AS PART OF THE SERVICE, SEISMIC DATA WILL BE
(A) RECEIVED FROM THE ARPANET; (B) STORED
AND INDEXED IN THE DATACOMPUTER; AND (C) MADE
AVAILABLE TO COMPUTERS ON THE ARPANET IN A
CONVENIENT AND TIMELY MANNER. THESE SERVICES
REPRESENT A SPECIAL APPLICATION OF THE ARPANET
DATACOMPUTER BEING DEVELOPED AND MAINTAINED BY
COMPUTER CORPORATION OF AMERICA (CCA) UNDER
CONTRACT.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A019 961 8/11 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATACOMPUTER SUPPORT OF SEISMIC DATA
ACTIVITY.

(U)

DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT. 1 AUG-31
OCT 75.

OCT 75 19P

CONTRACT: MDA903-74-C-0227, ARPA ORDER-2613

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 31 JUL 75,
AD-A019 897.

DESCRIPTORS: *SEISMIC DATA, *DATA PROCESSING,
*DATA STORAGE SYSTEMS, INFORMATION RETRIEVAL,
COMPUTER PROGRAMMING, COMMUNICATIONS NETWORKS,
INTERFACES

(U)

IDENTIFIERS: ARPA COMPUTER NETWORK, COMPUTER
NETWORKS, SEISMIC INPUT PROCESSORS

(U)

THE PURPOSE OF THIS PROJECT IS TO SUPPORT THE
ARPA-NMRO SEISMIC DATA ACTIVITY BY PROVIDING DATA
STORAGE AND RETRIEVAL SERVICES. THE ARPANET WILL
BE USED AS THE PRIMARY COMMUNICATIONS CHANNEL. AS
PART OF THE SERVICE, SEISMIC DATA WILL BE (A)
RECEIVED FROM THE ARPANET; (B) STORED AND
INDEXED IN THE DATACOMPUTER; AND (C) MADE
AVAILABLE TO COMPUTERS ON THE ARPANET IN A
CONVENIENT AND TIMELY MANNER. THE AMOUNT OF SEISMIC
DATA TO BE STORED REQUIRES THE ADDITION OF A MASS
MEMORY TO THE DATACOMPUTER SYSTEM. AN AMPLEX
TERABIT MEMORY SYSTEM (TBM) WITH A CAPACITY
OF ALMOST TWO HUNDRED BILLION BITS WILL BE INSTALLED
AT CCA IN JANUARY 1976 TO ANSWER THIS NEED. THE
OTHER HARDWARE ITEM VITAL TO THIS PROJECT, BESIDES
THE TBM, IS A SMALL SEISMIC INPUT PROCESSOR
(SIP).

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A020 051 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER
SCIENCE

PROGRAMMING THE ILLIAC IV, (U)

NOV 75 42P STEVENSON, DAVID K. ;
CONTRACT: N00014-67-A-0314-0010, NSF-GJ-32111
PROJ: NR-044-422

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMMING, *COMPUTER
ARCHITECTURE, *PARALLEL PROCESSING, *PARALLEL
PROCESSORS, MULTIPROCESSORS, DATA BASES, MACHINE
CODING, BUFFER STORAGE, ARITHMETIC UNITS, INPUT
OUTPUT PROCESSING, HIGH LEVEL LANGUAGES, ALGORITHMS,
LINEAR SYSTEMS (U)
IDENTIFIERS: ILLIAC 4 COMPUTER, DISC STORAGE (U)

A SIMPLE MODEL OF PARALLEL COMPUTATION IS A SINGLE
INSTRUCTION STREAM CONTROLLING A MULTIPLE PROCESSOR
CONFIGURATION. PROGRAMS FOR SUCH COMPUTERS ENTAIL A
HOST OF CONSIDERATIONS ABSENT FROM PROGRAMS FOR A
CONVENTIONAL SEQUENTIAL COMPUTER. THIS PAPER
EXPLORES THE MAIN CONSIDERATIONS IN USING SUCH A
COMPUTER, LARGELY IN TERMS OF THE ILLIAC 4. IT
DEALS WITH GROSS SYSTEM CHARACTERISTICS AND HOW THEY
AFFECT THE SUITABILITY OF VARIOUS PROBLEM
FORMULATIONS, PARALLEL PROGRAMS STRUCTURES AND DATA
REPRESENTATIONS, AND CODING STRATEGIES AND
TECHNIQUES. THE PAPER IS SELF-CONTAINED IN THAT IT
DOES NOT REQUIRE ANY PREVIOUS KNOWLEDGE OF THE
ILLIAC; IT SHOULD BE OF INTEREST BOTH TO THE
GENERAL COMPUTING COMMUNITY AS A SURVEY OF PRACTICAL
ASPECTS OF PARALLEL COMPUTATION AND TO THOSE ACTUALLY
CONTEMPLATING USING THE ILLIAC. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A020 073 5/2 5/1 5/9
PRC INFORMATION SCIENCES CO MCLEAN VA

AIR FORCE MILITARY PERSONNEL CENTER
MICROFORM SYSTEM. EXECUTIVE SUMMARY.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 1 JAN-15 MAY
75.

NOV 75 35P GARNER, J. K. I GILBERT, B.
H. I PERRY, D. R. I CATHCART, J. T. I
CONTRACT: F30602-71-C-0157
MONITOR: RADC TR-75-248-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A020
074.

DESCRIPTORS: *AIR FORCE PERSONNEL, *RECORDS,
*DATA STORAGE SYSTEMS, MICROFORM, INFORMATION
RETRIEVAL, COMPUTERS, PERSONNEL MANAGEMENT

(U)

THIS DOCUMENT IS THE FIRST VOLUME OF A TWO-VOLUME
FINAL REPORT ON THE DESIGN, DEVELOPMENT,
IMPLEMENTATION AND TEST AND EVALUATION OF THE AFMPC
MICROFORM SYSTEM. THIS VOLUME PRESENTS A SUMMARY
OF THE DETAIL AND SUPPORTING DATA OF THAT PRESENTED
IN VOLUME II.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A020 074 5/2 5/1 5/9
PRC INFORMATION SCIENCES CO MCLEAN VA

AIR FORCE MILITARY PERSONNEL CENTER
MICROFORM SYSTEM. SYSTEM DESCRIPTION.
TEST AND EVALUATION RESULTS.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 1 JAN 71-15
MAY 75,
NOV 75 224P GARNER, J. K. ; GILBERT, B.
H. ; PERRY, D. R. ; CATHCART, J. T. ;
CONTRACT: F30602-71-C-0157
MONITOR: RADC TR-75-248-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1. AD-A020
073.

DESCRIPTORS: *AIR FORCE PERSONNEL, *RECORDS,
*DATA STORAGE SYSTEMS, MICROFORM, INFORMATION
RETRIEVAL, COMPUTERS, MANAGEMENT, COST ANALYSIS

(U)

THIS DOCUMENT IS THE SECOND VOLUME OF A TWO-VOLUME
FINAL REPORT ON THE DESIGN, DEVELOPMENT,
IMPLEMENTATION AND TEST AND EVALUATION OF THE AFMPC
MICROFORM SYSTEM. THIS VOLUME PRESENTS DETAIL
DESCRIPTION AND SUPPORTING DATA AND ANALYSIS OF THE
MICROFORM SYSTEM. THE MICROFORM SYSTEM IS
A DOCUMENT STORAGE AND RETRIEVAL SYSTEM IN WHICH
PHOTOGRAPHICALLY REDUCED IMAGES OF THE AIR FORCE
PERSONNEL RECORDS, WHICH MUST BE RETAINED UNDER
TITLE 44 OF THE U.S. CODE, ARE MAINTAINED AND
MANAGED. THE CONVERSION AND MAINTENANCE PROCESS
AND THE RETRIEVAL AND DISSEMINATION PROCESS ARE
COMPLETELY DESCRIBED. SYSTEM OPERATIONAL COST FOR
CURRENT OPERATION LEVELS AS WELL AS MAXIMUM OPERATION
COSTS ARE PRESENTED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A020 136 9/2
ILLINOIS UNIV AT URBANA-CHAMPAIGN COORDINATED SCIENCE
LAB

DESIGN OF FAIL-SAFE ASYNCHRONOUS SEQUENTIAL
MACHINES.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JAN 76 88P FAN, YU-DAR ;
REPT. NO. R-713, UIIU-ENG-76-2201
CONTRACT: DAAB07-72-C-0259

UNCLASSIFIED REPORT

DESCRIPTORS: *CENTRAL PROCESSING UNITS, *COMPUTER
PROGRAMMING, *FAIL SAFE, LOGIC CIRCUITS,
GATES(CIRCUITS), COMPUTER PROGRAMS,
ASYNCHRONOUS SYSTEMS, THESES

(U)

IDENTIFIERS: FAULT TOLERANT COMPUTING,
ASYNCHRONOUS SEQUENTIAL CIRCUITS, *SEQUENTIAL
MACHINES, DESIGN

(U)

FAIL-SAFE DESIGNS ARE COMMONLY CLASSIFIED AS 0-
FAIL-SAFE OR 1-FAIL-SAFE DESIGNS, WHERE THE INDICATED
BINARY SIGNAL IS CONSIDERED THE 'SAFE' VALUE AND IS
PRODUCED IN CASE OF FAILURES, AND N-FAIL-SAFE
DESIGNS, WHERE BOTH OF THE SIGNALS 0 AND 1 ARE
CONSIDERED RELIABLE AND A DISTINCT THIRD SYMBOL, N,
IS PRODUCED IN CASE OF FAILURES IN THE CIRCUIT.
TWO METHODS FOR THE FAIL-SAFE DESIGN OF
ASYNCHRONOUS SEQUENTIAL MACHINES ARE PRESENTED IN
THIS PAPER: IN THE FIRST METHOD, ORDINARY BINARY
LOGIC ELEMENTS ARE USED IN THE REALIZATION. SIGNALS
ARE DUPLICATED TO GUARANTEE THE SAFE VALUE OF THE
OUTPUT IN THE 0-FAIL-SAFE OR 1-FAIL-SAFE CASE, AND A
NEW STATE ASSIGNMENT METHOD IS USED IN THE N-FAIL-
SAFE CASE. IN THE SECOND METHOD, COMPLETE SETS OF
'FAIL-SAFE LOGIC ELEMENTS' ARE DESIGNED FIRST AND
THEN ASSEMBLED INTO FAIL-SAFE REALIZATIONS. FOR
THE N-FAIL-SAFE CASE, TWO APPROACHES ARE
DISCUSSED: ONE USES THREE-VALUED LOGIC, THE OTHER
USES A BINARY ENCODING. THE APPROPRIATE CHECKING
CIRCUITS ARE ALSO DESIGNED SO THAT FAULTS ARE
INDICATED BEFORE THE CAPABILITIES OF THE DESIGNS ARE
EXCEEDED.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A020 333 14/5
RANGE COMMANDERS COUNCIL WHITE SANDS MISSILE RANGE N MEX
DATA REDUCTION AND COMPUTING GROUP

MICROFICHE GUIDE.

(U)

DESCRIPTIVE NOTE: FINAL REPT.

SEP 75 339P

REPT. NO. DR/CG-131-75

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SECTION 7 ATTACHMENTS AVAILABLE IN
MICROFICHE ONLY FROM RANGE COMMANDERS COUNCIL
ATTN: STEWS-SA-R. WHITE SANDS MISSILE
RANGE, N. MEX. 88002.

DESCRIPTORS: *MICROFICHE, *DATA STORAGE SYSTEMS,
*INFORMATION RETRIEVAL, *HANDBOOKS, UTILIZATION,
MANAGEMENT INFORMATION SYSTEMS, EFFICIENCY,
FILES(RECORDS), DATA REDUCTION, LOW COSTS,
PHOTOGRAPHIC FILM, STANDARDS, STANDARDIZATION,
ALPHANUMERIC DATA, DIGITAL COMPUTERS, MAGNETIC
RECORDING SYSTEMS, INPUT OUTPUT PROCESSING,
SPECIFICATIONS, DOCUMENTS

(U)

IDENTIFIERS: *COMPUTER OUTPUT MICROFILM
RECORDERS, COM(COMPUTER OUTPUT MICROFILM)

(U)

MICROFICHE IS A NEW INFORMATION MEDIA AND ITS
ADVANTAGES ARE EXTENDED BY USING NEW CONCEPTS FOR
INFORMATION STORAGE AND RETRIEVAL. MICROFICHE IS AN
EFFICIENT AND COST EFFECTIVE DEVICE FOR INFORMATION
DISTRIBUTION. MICROFICHE IS CONVENIENT AND
VERSATILE FOR THE USER AND IS CAPABLE OF
CONSOLIDATING MANY TYPES OF DATA (SOURCE DOCUMENTS,
COMPUTER OUTPUT, CHARTS AND MAPS, STRIP CHARTS,
OSCILLOGRAPHS, PHOTOGRAPHS, PICTURES, DRAWINGS,
SKETCHES, GRAPHS, ETC., IN BOTH BLACK AND WHITE OR
COLOR) INTO A SINGLE, COMPACT, RANDOMLY ACCESSIBLE
DATA FILE. THIS PUBLICATION PROVIDES GENERAL
MICROFICHE INFORMATION AND GUIDELINES FOR THE
DEVELOPMENT OF A MICROFICHE SYSTEM. METHODS AND
PROCEDURES FOR GENERATING AND DUPLICATING MICROFICHE
ARE PUBLISHED IN DETAIL ALONG WITH PROBLEMS THAT MAY
BE ENCOUNTERED. FEATURES AND ADVANTAGES OF
MICROFICHE FOR INFORMATION RECORDING, DISTRIBUTION,
AND RETRIEVAL ARE DESCRIBED. SPECIFICATIONS FOR
STANDARD MICROFICHE FORMATS ARE DESCRIBED IN DETAIL
ALONG WITH REASONS FOR USING STANDARD FORMATS.
DETAILS FOR IMPLEMENTING AND OPERATING A COMPLETE
SYSTEM ARE PROVIDED. A COMPLETE SYSTEM INTEGRATES
THE THREE BASIC TYPES OF MICROFICHE:

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A020 426 8/5 9/2
DEFENSE MAPPING AGENCY AEROSPACE CENTER ST LOUIS AIR FORCE
STATION MO

HOLDINGS, STORAGE AND RETRIEVAL OF DOD
GRAVITY LIBRARY DATA.

(U)

SEP 75 42P DOTSON, LARRY L. REINHOLTZ,
EDWARD B. I
REPT. NO. DMAAC/RP-75-003

UNCLASSIFIED REPORT

DESCRIPTORS: *GRAVITY, *DATA STORAGE SYSTEMS,
*INFORMATION RETRIEVAL, GEODESY, COMPUTER
APPLICATIONS, MAGNETIC TAPE
IDENTIFIERS: UNIVAC 1108 COMPUTERS, FILE
MAINTENANCE

(U)

(U)

THE DEPARTMENT OF DEFENSE (DOD) GRAVITY LIBRARY, MAINTAINED BY THE DEFENSE MAPPING AGENCY AEROSPACE CENTER, HAS GROWN FROM A SMALL CARD STORAGE FILE TO A MASSIVE DATA FILE CONTAINED ON MAGNETIC TAPES. IN THE GROWTH PROCESS, THE LIBRARY HAS PROGRESSED FROM THE USE OF A VARIOUS ASSORTMENT OF CARD PROCESSING EQUIPMENT TO THE USE OF A UNIVAC 1108 COMPUTER SYSTEM. THE TREMENDOUS INCREASE IN HOLDINGS AND REQUIREMENTS NECESSITATED THE ESTABLISHING OF STANDARD FORMATS FOR ALL GRAVITY AND RELATED DATA. THE RECEIPT OF DATA IN VARIOUS FORMS AND THE REDUCTION OF THIS DATA TO A COMMON FORM MADE IT NECESSARY TO DEVELOP IMPROVED PROCESSING TECHNIQUES FOR INPUTTING NEW DATA. VOLUMINOUS RETRIEVAL AND MAINTENANCE OF AUTOMATED DATA REQUIRED IMPROVED TECHNIQUES WHEN ADDRESSING INQUIRIES TO SUCH LARGE FILES. THIS REPORT IS INTENDED TO EXPLAIN THE HOLDINGS, SYSTEM OF STORAGE, MAINTENANCE OF FILES AND RETRIEVAL OF DATA.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A020 480 17/2 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

INTERFACE MESSAGE PROCESSORS FOR THE ARPA
COMPUTER NETWORK.

(U)

DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT, NO. 4, 1
OCT-31 DEC 75.

JAN 76 30P HEART, FRANK ;
REPT. NO. BBN-3236
CONTRACT: F08606-75-C-0032, ARPA ORDER-2351

UNCLASSIFIED REPORT

DESCRIPTORS: *MESSAGE PROCESSING, *SATELLITE
COMMUNICATIONS, DIGITAL COMPUTERS, INPUT OUTPUT
DEVICES, NETWORKS, INTERFACES, MAINTENANCE,
BUFFER STORAGE, COMPUTER PROGRAMS, ADDRESSING
IDENTIFIERS: STORE AND FORWARD COMMUNICATIONS

(U)

(U)

THE ARPA COMPUTER NETWORK IS A PACKET-
SWITCHING STORE-AND-FORWARD COMMUNICATIONS SYSTEM
DESIGNED FOR USE BY COMPUTERS AND COMPUTER TERMINALS.
THIS QUARTERLY TECHNICAL REPORT BRIEFLY
DESCRIBES VARIOUS ASPECTS OF NETWORK OPERATION AND
MAINTENANCE, INCLUDING IMP SOFTWARE MODIFICATIONS
TO PERMIT MORE THAN 63 IMPS ON THE NET AND MORE
THAN 4 HOST COMPUTERS ON AN IMP, AND SHIPMENT OF
THE FIRST PRIVATE LINE INTERFACE TO THE FIELD;
AND DISCUSSES IN SOME DETAIL THE NEW TIP SOFTWARE
TO BE RELEASED SHORTLY, THE PACKET SATELLITE
DEMONSTRATION AND SATELLITE IMP ACTIVITIES, AND
RECENT DEVELOPMENT IN PLURIBUS TECHNOLOGY, PLUS A
SUMMARY OF ACCOMPLISHMENTS TO DATE IN THE LATTER
AREA.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A020 515 9/2 12/1
GEORGIA UNIV ATHENS DEPT OF STATISTICS AND COMPUTER
SCIENCE

AN INTERACTIVE WORKSHEET SYSTEM FOR
STATISTICAL USAGE.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 75 298P BINGHAM,STEPHEN F. ;
BARGMANN,ROLF E. ;
REPT. NO. TR-106, THEMIS-UGA-31
CONTRACT: N00014-69-A-0423
PROJ: NR-042-261

UNCLASSIFIED REPORT

DESCRIPTORS: *INTERACTIVE GRAPHICS, *COMPUTER
GRAPHICS, *STATISTICS, COMPUTER PROGRAMMING, DATA
PROCESSING TERMINALS, MULTIVARIATE ANALYSIS,
SUBROUTINES, COMPUTER PROGRAMS, DIGITAL
COMPUTERS

(U)

IDENTIFIERS: CONVERSATIONAL COMPUTATION, OMNITAB
COMPUTER PROGRAM, WORKSHEETS, IBM 360 COMPUTERS,
IBM 370 COMPUTERS

(U)

THIS REPORT DISCUSSES THE IMPLEMENTATION OF AN
INTERACTIVE VERSION OF THE NATIONAL BUREAU OF
STANDARD'S OMNITAB SYSTEM. THIS VERSION HAS
BEEN ADOPTED TO WORK UNDER A GRAPHICS MONITOR
SYSTEM ON AN IBM 2250 TERMINAL, CONNECTED TO AN
IBM 360 OR 370 CENTRAL PROCESSOR. SEVERAL
ROUTINES HAVE BEEN ADDED OR ADAPTED WHICH MAKE THE
SYSTEM ESPECIALLY USEFUL FOR STATISTICAL
APPLICATIONS, AND AS AN INSTRUCTIONAL TOOL. THE
IMMEDIATE AVAILABILITY OF DISPLAYS OF SECTIONS OF THE
WORKSHEET, AFTER EACH INSTRUCTION IS THE CENTRAL
FEATURE OF THIS ADAPTATION. SEVERAL EXAMPLES OF
STATISTICAL APPLICATIONS ARE INCLUDED IN THIS REPORT.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A020 650 9/2 17/2
WHARTON SCHOOL OF FINANCE AND COMMERCE PHILADELPHIA PA
DEPT OF DECISION SCIENCES (MANAGEMENT)

DYNAMIC MODEL FOR DISTRIBUTED DATA-
BASES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
APR 75 34P LEVIN, KATRIEL DAN ; MORGAN,
HOWARD LEE ;
REPT. NO. 75-04-01
CONTRACT: N00014-75-C-0462

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA BASES, *DATA STORAGE SYSTEMS,
*FILES(RECORDS), *DATA TRANSMISSION SYSTEMS,
SITE SELECTION, DIGITAL COMPUTERS, COMPUTER
PROGRAMS, ACCESS, OPTIMIZATION, COSTS (U)
IDENTIFIERS: *COMPUTER NETWORKS, *DISTRIBUTED DATA
BASES, DYNAMIC OPTIMIZATION (U)

A MULTI-PERIOD MODEL OF PROGRAMS AND DATA FILE
ASSIGNMENT IN COMPUTER NETWORKS IS PRESENTED. IN
REALITY, ACCESS REQUEST PATTERNS ARE SUBJECT TO
CHANGE OVER TIME, THUS, AN OPTIMAL FILE ASSIGNMENT AT
ONE PERIOD IS NO LONGER OPTIMAL IN THE NEXT PERIOD.
AN OPTIMIZING PROCEDURE FOR THE ASSIGNMENT OF
PROGRAMS AND DATA FILES OVER TIME IS SUGGESTED.
THIS PROCEDURE, TAKES INTO ACCOUNT BOTH THE
DEPENDENCIES BETWEEN PROGRAMS AND DATA FILE AND THE
TRANSITION COSTS INCURRED BY FILE MOVEMENTS FROM ONE
ASSIGNMENT AT A GIVEN PERIOD TO ANOTHER ASSIGNMENT AT
THE NEXT PERIOD. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A020 746 9/2
STANFORD UNIV CALIF DIGITAL SYSTEMS LAB
SYSTEM/360 EMULATOR PERFORMANCE ESTIMATE.

(U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
NOV 75 14P WALLACH, WALTER A. , JR;
REPT. NO. TN-66
CONTRACT: AF-AFOSR-2865-75, AT(04-3)-326
PROJ: AF-9769
TASK: 976902
MONITOR: AFOSR TR-76-0018

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMS, *COMPUTER
ARCHITECTURE, MICROPROGRAMMING, PERFORMANCE,
ESTIMATES, BUS CONDUCTORS, MAPPING, MEMORY
DEVICES, TIME, ACCESS
IDENTIFIERS: *EMULATORS(COMPUTERS), EMMY
COMPUTER PROGRAM, IBM 360 COMPUTERS, TIMING,
MICROINSTRUCTIONS

(U)

(U)

THIS NOTE DESCRIBES THE PERFORMANCE AND INSTRUCTION
TIMING OF THE SYSTEM/360 EMULATORS FOR EMMY.
GENERAL EMULATOR STRUCTURE AND FLOW ARE INCLUDED IN
A PREVIOUS REPORT. A DETAILED DESCRIPTION OF THE
FINAL COMPLETE CLASS B EMULATOR WILL BE THE
SUBJECT OF A LATER REPORT. THE STANFORD EMMY
WILL EMULATE TYPICAL 360 INSTRUCTION STREAMS AT ABOUT
97KIPS. A PRODUCTION (MODEL 2 CONTROL
STORE) EMMY WILL ACHIEVE 143KIPS ON THE SAME
INSTRUCTION STREAM. A 360 MODEL 50 PROCESSES THIS
STREAM AT ABOUT 141KIPS. MINOR MODIFICATIONS TO
THE STANFORD MACHINE SHOULD ENABLE IT TO ACHIEVE
120KIPS. (AUTHOR)

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A020 926 9/2

NAVAL SURFACE WEAPONS CENTER WHITE OAK LAB SILVER SPRING
MD

PROGRESS TOWARD THE CROSSTIE MEMORY
III.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT. OCT 74-OCT 75,
OCT 75 38P SCHWEE, L. J. ; IRONS, H.
R. ; ANDERSON, W. E. ; SERY, R. S. ; IVAN SANT,
O. J. , JR;
REPT. NO. NSWC/WOL/TR-75-167
PROJ: MAT-03L-000/ZF61-512-001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-A002 980.

DESCRIPTORS: *BLOCK ORIENTED RANDOM ACCESS MEMORIES,
*RANDOM ACCESS COMPUTER STORAGE, *THIN FILM STORAGE
DEVICES, SHIFT REGISTERS, KERR MAGNETOOPTICAL
EFFECT, MAGNETIC DOMAINS, DOMAIN WALLS,
MICROELECTRONICS, SUBSTRATES

(U)

IDENTIFIERS: MAGNETIC FILM MEMORIES, MAGNETIC
BUBBLE DOMAINS, *CROSSTIE MEMORIES,
MAGNETORESISTIVITY

(U)

THIS IS THE THIRD ANNUAL TECHNICAL REPORT OF
PROGRESS TOWARD THE CROSSTIE MEMORY AND EMPHASIZES
THE WORK DONE DURING THE PAST YEAR. IN THE CROSSTIE
MEMORY, INFORMATION IS STORED IN MAGNETIC DOMAIN
WALLS RATHER THAN DOMAINS AND DOMAIN WALL MOTION IS
NOT USED IN ITS OPERATION. THE BASIC BUILDING BLOCK
OF THE CROSSTIE MEMORY IS A MAGNETIC SHIFT REGISTER
WHICH DEPENDS ON BLOCH LINE MOTION RATHER THAN
DOMAIN WALL MOTION. THE CROSSTIE MEMORY IS INTENDED
FOR USE AS A BLOCK ORIENTED RANDOM ACCESS MEMORY
(BORAM) OR FAST AUXILIARY MEMORY (FAM). THE
ADVANTAGES OF THE CROSSTIE MEMORY ARE SPEED, LOW
POWER, HIGH BIT DENSITY, NONVOLATILITY, A WIDE
TEMPERATURE RANGE OF OPERATION, LOW COST, AND USE OF
AVAILABLE TECHNOLOGY. THERE WERE TWO MAJOR
ACCOMPLISHMENTS THIS PAST YEAR. ONE IS THE
MAGNETORESISTANCE DETECTOR, THE SECOND IS THE
SERRATED TRACK WHICH SIMPLIFIES PROPAGATION,
DETECTION, AND FABRICATION. PRESENT PROBLEM AREAS
AND APPROACHES TO THEIR SOLUTION ARE DISCUSSED.
PLANS AND DESIGN GOALS ARE ALSO PRESENTED.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A021 148 9/2
STANFORD UNIV CALIF DIGITAL SYSTEMS LAB

FUNCTIONAL DESCRIPTION OF THE EMMY MAIN
MEMORY SYSTEM.

(U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
AUG 75 16P NEUHAUSER, CHARLES ;
REPT. NO. TN-57
CONTRACT: AF-AFOSR-2865-75, AT(04-3)-326
PROJ: AF-9769
TASK: 976902
MONITOR: AFOSR TR-76-0016

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, CENTRAL PROCESSING
UNITS, BYTE FUNCTIONAL MODULES, FUNCTIONS, BUS
CONDUCTORS, COMPUTER PROGRAMS, ERRORS, INTERFACES,
ACCESS, PROGRAMMERS

(U)

IDENTIFIERS: *EMULATORS(COMPUTERS), EMMY
COMPUTER PROGRAM

(U)

THIS DOCUMENT GIVES THE FUNCTIONAL DESCRIPTION OF
AN EMULATION ORIENTED MAIN MEMORY SYSTEM FOR USE ON
THE EMMY BUS SYSTEM. THE MAIN MEMORY SYSTEM
CONSISTS OF A BYTE ADDRESSABLE CORE MEMORY SYSTEM AND
A MEMORY CONTROLLER WHICH PERFORMS ELEMENTARY
TRANSFORMATIONS ON ADDRESS AND DATA UNDER CPU
CONTROL. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A021 232 9/2 15/3
ROME AIR DEVELOPMENT CENTER GRIFFISS AFB N Y

AN ASSOCIATIVE PROCESSOR APPLICATION
STUDY.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
JAN 76 44P SUMMERS, MICHAEL W. ;
REPT. NO. RADC-TR-75-318
PROJ: AF-5550
TASK: 555001

UNCLASSIFIED REPORT

DESCRIPTORS: *PARALLEL PROCESSORS, *ASSOCIATIVE
PROCESSING, *AIRBORNE WARNING AND CONTROL SYSTEM,
COMPUTER PROGRAMMING, REAL TIME, MEMORY DEVICES,
KALMAN FILTERING

(U)

THIS REPORT PRESENTS THE INITIAL RESULTS OF AN IN-
HOUSE, PARALLEL PROCESSOR APPLICATION STUDY. THE
STUDY WAS UNDERTAKEN TO EVALUATE THE ABILITY OF A
PARALLEL COMPUTER ARCHITECTURE TO PERFORM THE DATA
PROCESSING FUNCTIONS OF THE AIRBORNE WARNING AND
CONTROL SYSTEM (AWACS). THE RESULTS OF THE
ACTIVE TRACKING PORTION OF THE STUDY ARE PRESENTED
AFTER A BRIEF DESCRIPTION OF THE TEST PROBLEM AND THE
EVALUATION PROCEDURES.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A021 255 14/5 5/2
NATIONAL BUREAU OF STANDARDS WASHINGTON D C COMPUTER
SYSTEMS ENGINEERING DIV

EVALUATION OF TRANSPARENT ELECTRO-
PHOTOGRAPHIC FILM AND CAMERA SYSTEM.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
JAN 76 IIP BAGG, THOMAS C. ;
REPT. NO. NBSIR-76-991

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SPONSORED IN PART BY NAVAL SUPPLY
SYSTEMS COMMAND, WASHINGTON, D.C.

DESCRIPTORS: *PHOTOGRAPHIC FILM, *DATA STORAGE
SYSTEMS, *MICROFORM, ASSESSMENT,
ELECTROPHOTOGRAPHY

(U)

IDENTIFIERS: AB DICK/SCOTT SYSTEM 200,
ELECTROPHOTOGRAPHIC MATERIALS, ADD ON
MICROFILM

(U)

ON BEHALF OF THE NAVAL SUPPLY SYSTEMS
COMMAND, THE NATIONAL BUREAU OF STANDARDS WAS
REQUESTED TO ASSIST IN THE EVALUATION OF NEW
MICROFILM TECHNIQUES AND MATERIALS WHICH PERMIT THE
ADDING-ON OF IMAGES AT VARIOUS TIMES. THIS IS AN
INTERIM REPORT ON THE INITIAL EVALUATION OF THE AB
DICK/SCOTT SYSTEM 200 WHICH USES TRANSPARENT
ELECTROPHOTOGRAPHIC MATERIALS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A021 274 9/2
SCIENCE APPLICATIONS INC ARLINGTON VA

REPORT OF THE ARPA STUDY GROUP ON ADVANCED
MEMORY CONCEPTS.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 1 OCT 74-30 APR 75,
FEB 76 59P BERLEKAMP, E. R. IGARWIN, R.
L. IKNUTH, D. E. ILEDERBERG, J. ILEIBLER, R.
A. I

REPT. NO. SAI-75-631-WA
CONTRACT: F30602-75-C-0098, ARPA ORDER-2886
MONITOR: RADC TR-76-28

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, SYSTEMS ENGINEERING,
STATE OF THE ART
IDENTIFIERS: *COMPUTER STORAGE DEVICES

(U)

(U)

FOLLOWING A BRIEF OVERVIEW OF SHORT-TERM INDUSTRIAL
TRENDS, THIS REPORT HIGHLIGHTS FOUR IMPORTANT
RESEARCH AREAS WHICH SHOULD BE PROMINENTLY INCLUDED
IN THE ARPA PROGRAM IN ADVANCED MEMORY
CONCEPTS. LISTED IN THE ORDER OF THE IMMEDIACY OF
THEIR APPLICABILITY, THESE ARE: (1) INNOVATIVE
TECHNOLOGY, (2) ARCHITECTURE, SOFTWARE AND
THEORY, (3) MATERIALS SCIENCES, INCLUDING SOLID
STATE PROPERTIES OF ORGANICS, AND (4)
NEUROSCIENCES. THE FINAL SECTION OF THIS REPORT
CONTAINS RECOMMENDATIONS ON HOW THE ADVANCED
MEMORY CONCEPTS PROGRAM SHOULD BE MANAGED.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A021 421 9/2
SPERRY RAND CORP GREAT NECK N Y SPERRY GYROSCOPE

DESIGN AND FABRICATION OF RADIATION-HARDENED
MNOS MEMORY ARRAY.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 25 JAN 73-30 JUN 74,
JUL 75 205P MARRAFFINO, PAUL ; ROGERS, JOHN
M. ; ROGICH, STEVEN G. ; WEGENER, H. A. R. ;
REPT. NO. SGD-4282-0791
CONTRACT: F29601-73-C-0059
PROJ: DNA-NWED-QAXT
TASK: DD43
MONITOR: AFWL TR-74-209

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, *RANDOM ACCESS
COMPUTER STORAGE, SEMICONDUCTOR DEVICES, RADIATION
HARDENING, METAL NITRIDE OXIDE SEMICONDUCTORS,
TRANSISTORS, INTEGRATED CIRCUITS, AIRBORNE,
ENVIRONMENTAL TESTS

(U)

IDENTIFIERS: SEMICONDUCTOR COMPUTER STORAGE,
COMPUTER STORAGE DEVICES, *SEMICONDUCTOR STORAGE
DEVICES

(U)

THE REPORT DESCRIBES WORK PERFORMED TO DEVELOP A
RADIATION-HARDENED MNOS MEMORY ARRAY FOR USE IN A
RAM MEMORY OF AN AIRBORNE COMPUTER. A STUDY OF
MNOS DEVICE OPERATION LED TO THE FABRICATION AND
TEST OF SEVERAL MEMORY AND FIXED THRESHOLD
TRANSISTORS AND 256-BIT MEMORY CIRCUITS.
ENVIRONMENTAL TEST DATA TAKEN AT THREE RADIATION
SIMULATION SOURCES AND UNDER ENDURANCE STRESS IS
PRESENTED ALONG WITH STUDIES ON CIRCUIT DESIGN,
PACKAGING, AND SYSTEM DESIGN.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A021 673 9/2
ILLINOIS UNIV AT URBANA-CHAMPAIGN COORDINATED SCIENCE
LAB

HIGH DENSITY OPTICAL MEMORY. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
NOV 75 105P KNOEBEL, H. W. ; KRONE, H.
V. ; KIRKWOOD, B. D. ; BURT, J. V. ; HARRIS, D.
G. ;

CONTRACT: N00014-67-A-0305-0015

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED APR 75, AD-
A009 887.

DESCRIPTORS: *MEMORY DEVICES, COLOR CENTERS,
SODIUM CHLORIDE, POTASSIUM CHLORIDE,
ELECTROOPTICS, COMPUTER APPLICATIONS, RANDOM
ACCESS COMPUTER STORAGE (U)

IDENTIFIERS: *OPTICAL CRYSTAL MEMORIES, ALKALI
HALIDES (U)

THE PURPOSE OF THIS RESEARCH IS TO STUDY THE
PROBLEMS ASSOCIATED WITH AN EXPERIMENTAL READ-WRITE,
RANDOM ACCESS OPTICAL MEMORY AND TO DEMONSTRATE ITS
FEASIBILITY. THE MEMORY ELEMENT EMPLOYED IS THE
(M SUB A) COLOR CENTER IN KCL:NaCl. THE
FACT THAT IT IS EXTREMELY WELL STUDIED AND THAT THE
WRITING WAVELENGTH IS IN THE VISIBLE RANGE DETERMINED
ITS CHOICE FOR THIS STUDY. TOPICS DISCUSSED IN THE
REPORT INCLUDE THE FOLLOWING: COLOR CENTER
PHYSICS; DIFFRACTION LIMITED FOCUSING AND HEATING
EFFECTS; CRYSTAL PREPARATION; THERMO ELECTRIC
COOLING; POLARIZATION CONTROL; DEFLECTION
SYSTEMS; MEMORY CONTROLLER; COMPUTER INTERFACE;
EXPERIMENTAL RESULTS. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A021 828 9/2
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

DESIGN CONSIDERATIONS FOR THE NPS SIGNAL
PROCESSING AND DISPLAY LABORATORY
MULTIPROCESSING OPERATING SYSTEM.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
NOV 75 25P ALLEN, B. E. ; BARKSDALE, G.
L. , JR;
REPT. NO. NPS-72AN75111

UNCLASSIFIED REPORT

DESCRIPTORS: *MULTIPROCESSORS, REAL TIME, MEMORY
DEVICES, INTERACTIVE GRAPHICS, TIME SHARING,
COMPUTER ARCHITECTURE

(U)

IDENTIFIERS: *MUNIX SYSTEM, PDP-11/50 COMPUTERS,
*OPERATING SYSTEMS (COMPUTERS)

(U)

THE DESIGN AND IMPLEMENTATION OF MUNIX, A
TIGHTLY-COUPLED SYMMETRIC MULTIPROCESSING PDP 11
BASED OPERATING SYSTEM PROVIDING REAL-TIME,
INTERACTIVE, AND BACKGROUND PROCESSING FACILITIES IN
A HIERARCHICAL MEMORY ENVIRONMENT IS DESCRIBED.
MUNIX IS A VARIANT OF UNIX, AN OPERATING SYSTEM
FOR THE PDP 11 DEVELOPED AT BELL LABORATORIES.
THE THREE MAJOR DESIGN GOALS OF THE SYSTEM WERE:
(1) SUPPORT FOR PROCESSES CAPABLE OF REAL-TIME
INTERACTION WITH SEVERAL DYNAMIC GRAPHICS DISPLAY
UNITS, AN ARRAY PROCESSOR, AND A MULTI-CHANNEL A/
D CONVERTER; (2) INTERACTIVE AND BACKGROUND
PROCESSING FACILITIES TO SUPPORT PROGRAM DEVELOPMENT;
AND, (3) MANAGEMENT OF THE HIERARCHICAL STORAGE
CREATED BY THE MIX OF SHARED AND PRIVATE MEMORIES OF
VARIOUS SPEEDS.

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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A021 863 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

PLURIBUS DOCUMENT 1: OVERVIEW. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 75 15P ORNSTEIN, S. M. ;
REPT. NO. BBN-2999
CONTRACT: F08606-73-C-0027, F08606-75-C-0032
PROJ: ARPA ORDER-2351

UNCLASSIFIED REFORT

SUPPLEMENTARY NOTE: SEE ALSO DOCUMENT 2, AD-A021
864.

DESCRIPTORS: *MULTIPROCESSORS, *COMPUTER
ARCHITECTURE, HIGH RATE, BUS CONDUCTORS, COST
EFFECTIVENESS, RELIABILITY, INPUT OUTPUT PROCESSING,
MEMORY DEVICES, SWITCHING, PARALLEL PROCESSORS,
FAULT TOLERANT COMPUTING, CENTRAL PROCESSING UNITS,
NETWORKS (U)
IDENTIFIERS: COMPUTER NETWORKS, DESIGN, PLURIBUS
COMPUTERS, FAN IN, FAN OUT (U)

THE PLURIBUS IS A RELIABLE, EXPANDABLE, HIGH
BANDWIDTH LINE OF MULTI-RESOURCE COMPUTERS ORIGINALLY
DEVELOPED FOR USE AS A SWITCHING NODE IN THE ARPA
COMPUTER NETWORK. IT CAN BE CONFIGURED WITH
ARBITRARY AMOUNTS OF MEMORY AND I/O TAILORED TO
SUIT THE APPLICATION; IT IS DESIGNED TO SURVIVE
FAILURES AND CONTINUE OPERATION WITHOUT HUMAN
INTERVENTION EVEN WHILE REPAIRS ARE IN PROGRESS.
THIS REPORT, ONE OF A SET OF NINE VOLUMES
DOCUMENTING THE PLURIBUS LINE, PROVIDES A BRIEF
OVERVIEW OF THE SYSTEM AS A WHOLE. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A021 864 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

PLURIBUS DOCUMENT 2: SYSTEM HANDBOOK. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JAN 75 190P MORGAN, C. R. ;
REPT. NO. BBN-2930
CONTRACT: F08606-73-C-0027, F08606-75-C-0032
PROJ: ARPA ORDER-2351

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO DOCUMENT 1, AD-A021
863.

DESCRIPTORS: *MULTIPROCESSORS, *COMPUTER
ARCHITECTURE, HIGH RATE, BUS CONDUCTORS,
SWITCHING, HANDBOOKS, INPUT OUTPUT DEVICES,
MEMORY DEVICES, CENTRAL PROCESSING UNITS, FAULT
TOLERANT COMPUTING, PARALLEL PROCESSORS, COMPUTER
PROGRAM DOCUMENTATION, NETWORKS (U)
IDENTIFIERS: COMPUTER NETWORKS, PLURIBUS
COMPUTERS, COMPUTER SOFTWARE (U)

THIS REPORT, ONE OF A SET OF NINE VOLUMES
DOCUMENTING THE PLURIBUS LINE, PROVIDES A GUIDE TO
THE OTHER VOLUMES, A GLOSSARY, AN INDEX, AND AN
EXTENSIVE DESCRIPTION OF THE SYSTEM. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A021 919 9/2
IBM FEDERAL SYSTEMS DIV OWEGO N Y

PROGRAM DOCUMENTATION FOR THE VOLTSCAN
PROGRAM,

(U)

JAN 76 28P MILLER, J. J. , JR;
CONTRACT: F33615-75-C-5152
PROJ: AF-7184
TASK: 718414
MONITOR: AMRL, AMRL TR-76-13, HESS-76-2

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER PROGRAMS, *COMPUTER GRAPHICS,
*DIGITAL COMPUTERS, ASSEMBLY LANGUAGES, PUNCHED
CARDS, FLOW CHARTING, COMPUTER LOGIC, DIGITIZERS,
FORTRAN

(U)

IDENTIFIERS: *VOLTSCAN COMPUTER PROGRAM, IBM 370
COMPUTERS, IBM 2250 DISPLAYS, COMPUTER
SOFTWARE

(U)

THE VOLTSCAN PROGRAM PROVIDES THE CAPABILITY TO
GRAPHICALLY DISPLAY FOUR CHANNELS OF DIGITIZED ANALOG
SAMPLES. THE PROGRAM WAS WRITTEN FOR AN IBM
SYSTEM/370, MODEL 155 COMPUTER OPERATING UNDER
THE STANDARD MFT VERSION OF THE OPERATING
SYSTEM. ASSEMBLER LANGUAGE AND FORTRAN WERE
USED IN CODING THE PROGRAM. THE IBM 2250
GRAPHICS PROGRAMMING SERVICES WERE UTILIZED FOR
THE GRAPHIC SOFTWARE SUPPORT. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A022 088 9/2 9/5
MARYLAND UNIV COLLEGE PARK DEPT OF COMPUTER SCIENCE

DYNAMIC FILE ACCESS IN A DISTRIBUTED
COMPUTER NETWORK.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
FEB 76 32P MILLS, DAVID L. ;
REPT. NO. TR-415
CONTRACT: N00014-67-A-0239-0032, NSF-GK-41602

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTERS, *NETWORKS,
*MULTIPROCESSORS, DISTRIBUTION, COMPUTER PROGRAMS,
INTERFACES, INTEREQUIPMENT COMMUNICATION,
MINICOMPUTERS, DICTIONARIES, CATALOGS, ADAPTIVE
SYSTEMS

(U)

IDENTIFIERS: PDP 11 COMPUTERS, PDP 45 COMPUTERS,
PDP 40 COMPUTERS, UNIVAC 1106 COMPUTERS,
TRANSIENT FAULT RECOVERY

(U)

THIS PAPER DESCRIBES THE DESIGN OF A SYSTEM FOR
ACCESSING FILES AND OTHER NAMED OBJECTS IN A
DISTRIBUTED COMPUTER NETWORK. THE SYSTEM INCLUDES A
SET OF MUTUALLY COOPERATING PORTABLE PROCESSES WHICH,
TOGETHER WITH OTHER PROCESSES WHICH SUPPORT USER
PROGRAMS, CAN MIGRATE DYNAMICALLY BETWEEN THE
COMPUTERS OF THE NETWORK. IMPORTANT FEATURES IN THE
DESIGN INCLUDE AN EFFICIENT ACCESS METHOD WHICH
MINIMIZES DICTIONARY SEARCHES TO FIND A FILE WHEN ITS
LOCATION IS UNKNOWN IN ADVANCE AND A ROBUST RECOVERY
PROCEDURE THAT INSURES THE INTEGRITY OF THE SYSTEM
SHOULD ONE OR MORE OF THE PROCESSES OR COMPUTERS
FAIL. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A022 175 9/2 9/5
POLYTECHNIC COLL OF CENTRAL LONDON (ENGLAND)*

VARIABLE TOPOLOGY MULTICOMPUTER SYSTEM. (U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,

NOV 75 63P PAKER, YAKUP ;

CONTRACT: DA-ERO-124-74-G-0079

PROJ: DA-1-T-161102-B-31-E

TASK: 1-T-161102-B-31-E-00

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPUTER ARCHITECTURE,
*MULTIPROCESSORS, *COMPUTER COMMUNICATIONS,
*DIGITAL COMPUTERS, NODES, REAL TIME, NETWORKS,
MODELS, CHIPS(ELECTRONICS), INTEGRATED
CIRCUITS, SIMULATION, SWITCHING CIRCUITS, HIGH
RATE, MEMORY DEVICES (U)

IDENTIFIERS: *VARIABLE TOPOLOGY MULTICOMPUTERS,
LARGE SCALE INTERGRATION (U)

THE MAIN FEATURES OF A PROPOSED VARIABLE TOPOLOGY
MULTI-COMPUTER (VTM) SYSTEM HAVE BEEN ESTABLISHED.
THE COMMUNICATION LINKS BETWEEN THE NODE COMPUTERS
OF THE NETWORK CAN BE DESIGNED TO ALLOW THE
COMBINATION OF BOTH PACKET AND CIRCUIT SWITCHING
TECHNIQUES. DESIGN ASPECTS OF THE INTER-COMPUTER
MESSAGE HANDLER ARE DISCUSSED IN DETAIL. VARIOUS
ANALYTICAL MODELS OF VTM STRUCTURES HAVE BEEN
INVESTIGATED AND THE RESULTS OF A DIGITAL SIMULATION
OF THE PERFORMANCE OF A SINGLE NODE COMPUTER ARE
PRESENTED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A022 618 17/9 9/2
SINGER CO SUNNYVALE CALIF SIMULATION PRODUCTS DIV

SIMPLIFIED RADAR AZIMUTH BEAMSPREAD
STUDY.

(U)

DESCRIPTIVE NOTE: FINAL REPT. 10 MAY-19 DEC 75,
DEC 75 58P WINDSOR, DAVID ;
REPT. NO. UC-7256
CONTRACT: F33657-73-C-0692
PROJ: AF-1183

UNCLASSIFIED REPORT

DESCRIPTORS: *RADAR MAPPING, *BEAM FORMING, *DATA
STORAGE SYSTEMS, COMPUTERIZED SIMULATION,
ALGORITHMS, AZIMUTH, AIRBORNE, JET FIGHTERS,
ELECTRONIC AIRCRAFT, DATA COMPRESSION, FOURIER
TRANSFORMATION

(U)

IDENTIFIERS: F-4F AIRCRAFT, F-4 AIRCRAFT, E-
2C AIRCRAFT, E-2 AIRCRAFT, AN/APQ-110,
LITERAL STORAGE

(U)

THIS REPORT DESCRIBES A STUDY FOR A SIMPLIFIED
BEAMSPREAD SIMULATION FOR USE IN DIGITAL RADAR
LANDMASS SIMULATORS. FOUR NEW BEAMSPREAD ALGORITHMS
ARE PRESENTED WHICH REQUIRE LESS MEMORY AND COMPUTING
HARDWARE THAN THOSE FOUND IN CURRENTLY AVAILABLE
SYSTEMS. COMPUTER-GENERATED PHOTOGRAPHS ARE
INCLUDED TO GIVE A DIRECT VISUAL COMPARISON OF THE
EFFECTS OF THE NEW ALGORITHMS WITH THE EFFECTS OF THE
BEAMSPREAD ALGORITHM IN THE F-4F DRLMS.
(AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A022 667 9/2 9/5
HUGHES AIRCRAFT CO CULVER CITY CALIF DATA SYSTEMS DIV

RELIABILITY EVALUATION OF PROGRAMMABLE READ-
ONLY MEMORIES (PROMS).

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 4 MAR 74-3
MAR 75.

FEB 76 288P DONNELLY, T. M. ; POWELL, W.
W. ; DEWITT, C. M. , III ; JERAND, D. R. ;
PENBERG, M. ;

CONTRACT: F30602-74-C-0156

PROJ: AF-5519

TASK: 551904

MONITOR: RADC TR-75-278

UNCLASSIFIED REPORT

DESCRIPTORS: *READ ONLY MEMORIES, *MEMORY DEVICES,
*MICROCIRCUITS, RELIABILITY(ELECTRONICS),
AVALANCHE DIODES, CIRCUIT ANALYSIS, PROGRAMMED
INSTRUCTION, COMPUTER PROGRAMMING,
MATRICES(CIRCUITS), HIGH RELIABILITY

(U)

IDENTIFIERS: PROM PROGRAMMABLE READ ONLY
MEMORIES), PROGRAMMABLE READ ONLY MEMORIES,
TITANIUM TUNGSTEN FUZES

(U)

THE PRIMARY OBJECTIVES OF THIS STUDY WERE TO:

(1) ASSESS UNIQUE FACTORS AFFECTING THE
RELIABILITY OF 1024-BIT OPEN COLLECTOR PROGRAMMABLE
READ-ONLY MEMORIES (PROMS) FROM THREE
TECHNOLOGIES, I.E., NICHROME FUSIBLE LINKS, TITANIUM-
TUNGSTEN FUSIBLE LINKS AND AVALANCHE INDUCED
MIGRATION (AIM) OR 'BLOWN DIODE' TECHNOLOGY;
(2) RECOMMEND PROGRAMMING, TESTING AND SCREENING
GUIDELINES FOR THE SUBJECT PROMS; AND (3)
DEVELOP A FAILURE PREDICTION TECHNIQUE FOR THE
SUBJECT PROMS.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A022 859 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATACOMPUTER PROJECT. (U)

DESCRIPTIVE NOTE: SEMI-ANNUAL TECHNICAL REPT. 1 JUL-31
DEC 75.

JAN 76 54P

CONTRACT: MDA903-74-C-0225, ARPA ORDER-2687

UNCLASSIFIED REPORT

DESCRIPTORS: *DATA STORAGE SYSTEMS, *COMMUNICATIONS
NETWORKS, TIME SHARING, COMPILERS, DATA
MANAGEMENT, MEMORY DEVICES, INTERFACES (U)

IDENTIFIERS: *DATACOMPUTER PROJECT, *COMPUTER
NETWORKS, TENEX SYSTEM, COMPUTER STORAGE
MANAGEMENT, ARPA COMPUTER NETWORK (U)

THIS REPORT DESCRIBES OUR WORK ON THE
DATACOMPUTER SYSTEM FROM JULY 1, 1975 TO
DECEMBER 31, 1975. WORK DURING THE REPORTING
PERIOD FALLS INTO TWO MAIN CATEGORIES: INSTALLATION
AND OPERATION OF DATACOMPUTER VERSION 1, THE
FIRST FULL SERVICE VERSION OF THE DATACOMPUTER; AND
PREPARATION FOR THE NEXT VERSION, WHICH IS TO
INCORPORATE AN AMPEX TERABIT MEMORY SYSTEM.
PARALLEL OPERATION OF VERSION 0/11 CONTINUED INTO
THIS PERIOD, AND VARIOUS OTHER ACTIVITIES RECEIVED
ATTENTION AS WILL BE REPORTED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A022 862 9/2
MACRODATA CORP WOODLAND HILLS CALIF

RELIABILITY EVALUATION OF SEMICONDUCTOR
MEMORIES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
FEB 76 278P CHIANG, ALBERT C. L. ;
CONTRACT: F30602-74-C-0093
PROJ: AF-5519
TASK: 551904
MONITOR: RADC TR-76-16

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, SEMICONDUCTOR DEVICES,
READ ONLY MEMORIES, RANDOM ACCESS COMPUTER STORAGE,
RELIABILITY(ELECTRONICS), MILITARY REQUIREMENTS,
MICROCIRCUITS

(U)

IDENTIFIERS: *SEMICONDUCTOR STORAGE DEVICES,
*SEMICONDUCTOR COMPUTER STORAGE, COMPUTER STORAGE
DEVICES

(U)

THE REPORT PRESENTS A STUDY WHICH WAS CONDUCTED TO
EVALUATE THE RELIABILITY OF HIGH USAGE SEMICONDUCTOR
MEMORIES. THE STUDY DETERMINED PARAMETRIC AND
FUNCTIONAL TESTS WHICH ARE REQUIRED FOR MILITARY
SPECIFICATIONS. SPECIAL ATTENTION WAS GIVEN TO THE
APPLICATION OF FUNCTIONAL TESTS TO DETECT AND SCREEN
OUT DEVICES WITH PATTERN SENSITIVITY. FIVE TYPES
WHICH COVER A LARGE PART OF THE WIDE SPECTRUM OF
MEMORY DEVICES IN USE TODAY WERE CHOSEN FOR
CHARACTERIZATION AND TESTING TO DETERMINE OPTIMUM
PARAMETRIC AND FUNCTIONAL TESTS AND LIMITS REQUIRED
IN MILITARY SPECIFICATIONS FOR MEMORIES.

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A023 116 9/2
TEXAS UNIV AT AUSTIN ELECTRONICS RESEARCH CENTER

ANALYSIS OF VIRTUAL MEMORY
IMPLEMENTATIONS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUL 75 123P WHITE, LIONEL S. , JR.;
WELCH, T. A. ;
REPT. NO. TR-174
CONTRACT: F44620-71-C-0091
PROJ: AF-6813, AF-4751
TASK: 681306
MONITOR: AFOSR TR-76-0190

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, MULTIPLEXING,
INTEGRATED CIRCUITS, RANDOM ACCESS COMPUTER STORAGE (U)
IDENTIFIERS: *VIRTUAL MEMORY, SEMICONDUCTOR
COMPUTER STORAGE, LOGIC DESIGN (U)

SEMICONDUCTOR MEMORY COMPONENTS PROVIDE OPPORTUNITIES FOR NEW COMPUTER MEMORY STRUCTURES DUE TO TWO ADVANTAGES THEY OFFER OVER CORE MEMORIES: (1) LOGIC CAN BE INTEGRATED INTO THE MEMORY STRUCTURES, AND (2) SMALL BLOCKS OF MEMORY CAN BE ACCESSED INDEPENDENTLY FOR IMPROVED ACCESS FLEXIBILITY. THIS RESEARCH PROPOSES USING THESE PROPERTIES TO ACHIEVE A MORE EFFICIENT IMPLEMENTATION OF A VIRTUAL MEMORY SYSTEM. THE PROPOSED SYSTEM USES NOVEL SEMICONDUCTOR MEMORY CHIPS TO INTEGRATE THE ADDRESS-MAPPING FUNCTION AND THE DATA-MULTIPLEXING FUNCTION INTO THE MEMORY CIRCUITS, WITH CONSEQUENT SAVING OF EXTERNAL OVERHEAD CIRCUITRY. THIS PROPOSED SYSTEM IS COMPARED IN DETAIL WITH A CONVENTIONAL IMPLEMENTATION OF A VIRTUAL MEMORY SYSTEM, SHOWING COST AND PERFORMANCE FIGURES FOR A VARIETY OF SYSTEM CONFIGURATIONS. THE PROPOSED SYSTEM IS SHOWN TO GIVE SUPERIOR RESULTS IN SMALLER MEMORIES OR IN HIGH-PERFORMANCE MEMORIES. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A023 227 9/5

RELIABILITY ANALYSIS CENTER GRIFFISS AFB N Y

MICROCIRCUIT DEVICE RELIABILITY: MEMORY/
LSI DATA,

(U)

76 215P RICKERS, HENRY C. ;
REPT. NO. RAC-MDR-3
CONTRACT: F30602-73-C-0065

UNCLASSIFIED REPORT

DESCRIPTORS: *INTEGRATED CIRCUITS, *MICROCIRCUITS,
*RELIABILITY(ELECTRONICS), MEMORY DEVICES,
FABRICATION, SHIFT REGISTERS, READ ONLY MEMORIES,
RANDOM ACCESS COMPUTER STORAGE
IDENTIFIERS: LARGE SCALE INTEGRATED CIRCUITS,
MICROPROCESSORS, *SEMICONDUCTOR COMPUTER
STORAGE

(U)

(U)

THE COMPENDIUM OF MICROCIRCUIT RELIABILITY DATA
IS SEPARATED INTO TWO PARTS: GENERAL LSI
TECHNOLOGY SUMMARIES AND DETAILED DATA
SECTIONS. THE FIRST PART PRESENTS DESCRIPTIONS OF
THE FABRICATION PROCESSES OF THE LSI TECHNOLOGIES,
CHARACTERIZATION OF PARAMETERS WHICH INFLUENCE DEVICE
RELAIBILITY, AND GENERAL DATA SUMMARIES. THE
SECOND PART IS ARRANGED WITH EACH SECTION DEVOTED TO
A PARTICULAR MEMORY/LSI DEVICE FUNCTION. EACH
SECTION IN PART TWO CONTAINS A DETAILED BREAKDOWN OF
PART LEVEL LIFE AND ENVIRONMENTAL/SCREENING TEST
RESULTS ARRANGED BY PART MANUFACTURER AND PART
NUMBER. IN ADDITION, EACH SECTION CONTAINS DATA
SUMMARIES WHICH PROVIDE QUICK INSIGHT INTO LIFE TEST
RESULTS, RELIABILITY DEMONSTRATION TEST RESULTS, AND
FAILURE CLASSIFICATIONS.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A023 387 9/2
CALIFORNIA UNIV BERKELEY ELECTRONICS RESEARCH LAB

A REVIEW AND PROJECTION OF SEMICONDUCTOR
COMPONENTS FOR DIGITAL STORAGE, (U)

NOV 74 14P HODGES, DAVID A. I
CONTRACT: F44620-71-C-0087
PROJ: AF-4751
TASK: 475105
MONITOR: AFOSR TR-76-0428

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN PROCEEDINGS OF THE IEEE,
V63 N8 P1136-1147 AUG 75.

DESCRIPTORS: *MEMORY DEVICES, *INTEGRATED CIRCUITS,
*SEMICONDUCTOR DEVICES, METAL OXIDE SEMICONDUCTORS,
METAL NITRIDE OXIDE SEMICONDUCTORS, CHARGE COUPLED
DEVICES, BIPOLAR TRANSISTORS, COSTS, (U)
RELIABILITY(ELECTRONICS), REPRINTS (U)
IDENTIFIERS: *SEMICONDUCTOR COMPUTER STORAGE (U)

EVOLUTION OF PRESENT INTEGRATED-CIRCUIT TECHNOLOGY
OVER THE REMAINDER OF THE DECADE SHOULD RESULT IN
SEMICONDUCTOR MEMORIES WHICH ARE COMPETITIVE WITH
MOVING-SURFACE MEMORIES AND OTHER ALTERNATIVES IN
MANY DIGITAL STORAGE APPLICATIONS REQUIRING 10 TO THE
7TH POWER-10 TO THE 10TH POWER BITS CAPACITY. THIS
PAPER CONSIDERS MOS, MNOS, CCD, AND BIPOLAR
COMPONENT APPROACHES TO THIS OBJECTIVE. COST,
RELIABILITY AND POWER CONSUMPTION, AS AFFECTED BY
TECHNOLOGICAL CHOICES, RECEIVE ATTENTION.
ALTERNATIVE DEVICE TECHNOLOGIES AND CIRCUIT DESIGNS
ARE EXAMINED. THE ONE-TRANSISTOR MOS RAM IS
SEEN TO HAVE POTENTIAL FOR CONSIDERABLE GROWTH. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A023 443 9/2
ILLINOIS UNIV AT URBANA-CHAMPAIGN COORDINATED SCIENCE
LAB

M AND M SYSTEM DESIGN AND OPERATION. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 75 73P JACOBUS, CHARLES JERIMIAH ;
REPT. NO. R-709, UILU-ENG-75-2245
CONTRACT: DAAB07-72-C-0259, F33615-73-C-1238

UNCLASSIFIED REPORT

DESCRIPTORS: *MINICOMPUTERS, *MULTIPROCESSORS,
*COMPUTER PROGRAMMING, MEMORY DEVICES, DATA
MANAGEMENT, CONSOLES, COMPUTER ARCHITECTURE, REAL
TIME, INPUT OUTPUT PROCESSING,
DEBUGGING(COMPUTERS) (U)
IDENTIFIERS: MULTIPROGRAMMING, PDP 11 COMPUTERS,
MEMORY MANAGEMENT, *PDP-11/40 COMPUTERS,
*OPERATING SYSTEMS(COMPUTERS) (U)

THIS DOCUMENT DESCRIBES THE OPERATION AND DESIGN OF
A MULTIPROGRAMMING OPERATING SYSTEM WRITTEN FOR THE
PDP-11/40 WITH MEMORY MANAGEMENT OPTION. NO
PARTICULAR SYSTEM DEVICE IS REQUIRED IN THAT ALL
SYSTEM MODULES RESIDE IN CORE. CONTROL COMMANDS ARE
ISSUED THROUGH ONE SYSTEM CONSOLE AND MULTIPROCESSING
IS INITIATED FROM A ROOT TASK STARTED THROUGH
COMMANDS TYPED TO THIS CONSOLE. THIS SYSTEM IS
PRIMARILY SINGLE USER WITH MULTIPROCESSING OPTIONS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A023 598 8/11 9/2
COMPUTER CORP OF AMERICA CAMBRIDGE MASS

DATA COMPUTER SUPPORT OF SEISMIC DATA
ACTIVITY.

(U)

DESCRIPTIVE NOTE: QUARTERLY TECHNICAL REPT. 1 NOV 75-31
JAN 76.

JAN 76 14P

CONTRACT: MDA903-74-C-0227, ARPA ORDER-2613

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO REPORT DATED 31 OCT 75,
AD-A019 961.

DESCRIPTORS: *SEISMIC DATA, *DATA PROCESSING,
*DATA STORAGE SYSTEMS, INFORMATION RETRIEVAL,
COMPUTER PROGRAMMING, COMMUNICATIONS NETWORKS,
INTERFACES

(U)

IDENTIFIERS: ARPA COMPUTER NETWORK, COMPUTER
NETWORKS, SEISMIC INPUT PROCESSORS, *DATA COMPUTER

(U)

PROJECT ACTIVITY CAN BE DIVIDED INTO FOUR
CATAGORIES: (1) SIP DEVELOPMENT AND NETWORK
BANDWIDTH CONSIDERATIONS; (2) TBM ACQUISITION
AND INTEGRATION INTO THE DATA COMPUTER; (3)
COORDINATION WITH THE SEISMIC COMMUNITY; AND (4)
SEISMIC-DATA RELATED DATA COMPUTER DEVELOPMENT.
ONE SECTION IN THIS REPORT IS DEVOTED TO EACH OF
THESE CATAGORIES.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A023 931 9/2
STANFORD UNIV CALIF DIGITAL SYSTEMS LAB

AN EFFICIENT IMPLEMENTATION OF MONITORS AND
CONDITION VARIABLES.

(U)

DESCRIPTIVE NOTE: TECHNICAL NOTE,
AUG 75 24P SAXENA, ASHOK R. I
REPT. NO. TN-72
CONTRACT: N00014-67-A-0112-0044
PROJ: AF-7151

UNCLASSIFIED REPORT

DESCRIPTORS: *MONITORS, PARALLEL PROCESSING,
MEMORY DEVICES, BOOLEAN ALGEBRA, PROCESSING
EQUIPMENT, PARALLEL PROCESSING, CODING, COMPUTER
COMMUNICATIONS

(U)

IDENTIFIERS: SEMAPHORES, STRUCTURED
PROGRAMMING

(U)

THIS PAPER PRESENTS A PROPOSAL FOR AN
IMPLEMENTATION OF MONITORS AND CONDITION VARIABLES.
THE PROPOSED IMPLEMENTATION ALLOWS THE USE OF A
LARGE NUMBER OF MONITORS AND CONDITION VARIABLES WITH
MAIN MEMORY REQUIREMENTS PROPORTIONAL TO THE NUMBER
OF CONCURRENT PROCESSES AND THE MAXIMUM DEPTH OF
NESTED MONITOR CALLS. THE PROPOSED IMPLEMENTATION
IS USEFUL FOR OPERATING SYSTEMS WITH A FIXED (AND
SMALL) NUMBER OF CONCURRENT PROCESSES WITH VIRTUAL
MEMORY. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A024 019 9/2 17/2
NAVAL RESEARCH LAB WASHINGTON D C

RANDOM BIT GENERATOR.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
MAR 76 47P CHAYT, KENNETH A. ;
REPT. NO. NRL-MR-3249
PROJ: NRL-ROI-62, XCCS:

UNCLASSIFIED REPORT

DESCRIPTORS: *RANDOM NUMBER GENERATORS, *ERROR
CORRECTION CODES, *VOICE COMMUNICATIONS, DATA
PROCESSING, DIGITAL SYSTEMS, SEQUENCES, CHANNELS,
BINARY NOTATION, INTEGRATED CIRCUITS

(U)

IDENTIFIERS: *RANDOM NUMBER GENERATORS, VOICE
PROCESSORS, THUMBWHEEL SWITCHES

(U)

A RANDOM BIT GENERATOR (RBG) HAS BEEN BUILT BY
NRL TO AID IN EVALUATING DIGITAL VOICE PROCESSORS
IN A CONTROLLED ERROR ENVIRONMENT. THE RBG
INTRODUCES INDEPENDENT, EQUIPROBABLE BIT ERRORS INTO
THE DIGITAL OUTPUT OF THE PROCESSOR UNDER TEST.
THUMBWHEEL SWITCHES ON THE RBG ALLOW SELECTION OF
THE DESIRED BIT ERROR RATE. THE RANDOM-NUMBER
GENERATOR USED IN THE RBG WAS COMPREHENSIVELY
TESTED TO VERIFY ITS STOCHASTICITY. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A024 665 12/1 9/2
SYRACUSE UNIV N Y DEPT OF ELECTRICAL AND COMPUTER
ENGINEERING

AN APPROACH OF DEVELOPING FAST TRANSFORM
ALGORITHMS.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
MAR 76 136P YANG, SUN-MAW IFENG, TSE-YUN I
CONTRACT: F30602-74-C-0335
PROJ: AF-5581
TASK: 558102
MONITOR: RADC TR-76-92

UNCLASSIFIED REPORT

DESCRIPTORS: *FOURIER TRANSFORMATION, *ALGORITHMS,
WALSH TRANSFORMATION, WALSH FUNCTIONS, DIGITAL
FILTERS, DATA STORAGE SYSTEMS, THEOREMS, PARALLEL
PROCESSING, ASSOCIATIVE PROCESSING,
MATRICES (MATHEMATICS)

(U)

IDENTIFIERS: *FAST FOURIER TRANSFORMS, COMPUTING
TIME, FAST WALSH TRANSFORMS, *HADAMARD
TRANSFORMATION

(U)

TO SUMMARIZE FOR EACH CHAPTER, CHAPTER 2 GIVES A
METHOD TO DESCRIBE FAST TRANSFORM ALGORITHM AND
ILLUSTRATE IT BY APPLYING IT FOR TWO CLASSES OF INPUT
FOR FFT. CHAPTER 3 DERIVES A NEW DEFINITION OF
WALSH FUNCTIONS AND ILLUSTRATES ITS USEFULNESS BY
APPLYING IT FOR WALSH TRANSFORM, AND WALSH
SUMMING AND DIFFERENCING TRANSFORMS. SEVERAL
POTENTIAL APPLICATIONS ARE ALSO POINTED OUT.
CHAPTER 4 PRESENTS A GENERALIZED FWT ALGORITHM
WHICH IS OBTAINED FROM PREVIOUS RESULTS IN THIS STUDY
TOGETHER WITH THE RESULT OF PRESENTLY EXISTING FWT
ALGORITHMS.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A024 966 9/2
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER
SCIENCE

AN APPROACH TO GLOBAL REGISTER
ALLOCATION.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
DEC 75 141P JOHNSON, RICHARD KARL ;
CONTRACT: F44620-73-C-0074, ARPA ORDER-2466
MONITOR: AFOSR TR-76-0603

UNCLASSIFIED REPORT

DESCRIPTORS: *COMPILERS, *DATA STORAGE SYSTEMS,
*COMPUTER PROGRAMS, *SHIFT REGISTERS, *ADAPTIVE
SYSTEMS, PROGRAMMING LANGUAGES, ALGORITHMS,
MACHINE CODING, HIGH LEVEL LANGUAGES, DECISION
MAKING, POSITION(LOCATION), GLOBAL,
TARGETS

(U)

IDENTIFIERS: *REGISTER ALLOCATION

(U)

THE THESIS PRESENTS AN APPROACH TO THE PROBLEM OF
GLOBAL REGISTER ALLOCATION AS PERFORMED BY AN
OPTIMIZING COMPILER. THE PROBLEM CONSIDERED IS
ACTUALLY THE MORE GENERAL ONE OF CHOOSING WHAT
PHYSICAL RESOURCE WITHIN THE TARGET MACHINE WILL BE
USED TO HOLD THE RESULTS OF VARIOUS COMPUTATIONS IN A
RUNNING PROGRAM. THE RESULTS MAY BE THE VALUES OF
COMMON (REDUNDANT) SUBEXPRESSIONS, PARTIAL
RESULTS DEVELOPED DURING EXPRESSION EVALUATION, OR
VARIABLES DECLARED BY THE PROGRAMMER. AN OPTIMIZING
COMPILER CAN MAKE BETTER USE OF THE RESOURCES OF THE
TARGET MACHINE IF THESE DECISIONS ARE ALL CONSIDERED
TOGETHER AT OR NEAR THE SOURCE LEVEL RATHER THAN
BEING DISTRIBUTED THROUGHOUT THE COMPILER AND
OPERATING AT BOTH SOURCE AND OBJECT LEVELS. A
DECOMPOSITION OF AN OPTIMIZING COMPILER IS PRESENTED
WITH RESEARCH FOCUSING ON ONE PART OF THE COMPILER,
NAMELY THE PART WHICH ASSIGNS THE COMPUTED RESULTS TO
PHYSICAL LOCATIONS.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A025 173 9/2 12/1
CARNEGIE-MELLON UNIV PITTSBURGH PA DEPT OF COMPUTER
SCIENCE

COPYING LIST STRUCTURES WITHOUT AUXILIARY
STORAGE.

(U)

DESCRIPTIVE NOTE: INTERIM REPT.,
OCT 75 32P CLARK, DOUGLAS W. ;
CONTRACT: F44620-73-C-0074, ARPA ORDER-2466
MONITOR: AFOSR TR-76-0599

UNCLASSIFIED REPORT

DESCRIPTORS: *WORD ORGANIZED STORAGE, *ALGORITHMS,
STRUCTURES, BINARY NOTATION, MEMORY DEVICES,
ADDRESSING, CELLS, VARIABLES
IDENTIFIERS: *COPYING LIST STRUCTURES

(U)

(U)

AN ALGORITHM IS PRESENTED FOR COPYING AN ARBITRARY
LIST STRUCTURE INTO A BLOCK OF CONTIGUOUS STORAGE
LOCATIONS WITHOUT DESTROYING THE ORIGINAL LIST.
APART FROM A FIXED NUMBER OF PROGRAM VARIABLES, NO
AUXILIARY STORAGE, SUCH AS A STACK, IS USED. THE
ALGORITHM NEEDS NO MARK BITS AND OPERATES IN LINEAR
TIME. IT IS SHOWN TO BE SIGNIFICANTLY FASTER THAN
THE BEST PREVIOUS ALGORITHM FOR THE SAME PROBLEM.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A025 206 9/2
STANFORD UNIV CALIF DIGITAL SYSTEMS LAB

FEASIBILITY OF REAL TIME EMULATION.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,
NOV 75 10P FLYNN, MICHAEL J. ;
REPT. NO. TN-70
CONTRACT: AF-AFOSR-2865-75
PROJ: AF-9769
TASK: 976902
MONITOR: AFOSR TR-76-0541

UNCLASSIFIED REPORT

DESCRIPTORS: *REAL TIME, *MICROPROGRAMMING,
CENTRAL PROCESSING UNITS, PROGRAMMING LANGUAGES,
COMPUTER ARCHITECTURE, COMPUTER PROGRAM
DOCUMENTATION, DEBUGGING (COMPUTERS), MEMORY
DEVICES, IMAGES, DATA PROCESSING EQUIPMENT,
FEASIBILITY STUDIES

(U)

IDENTIFIERS: *EMULATORS (COMPUTERS), COMPUTER
SOFTWARE, HOST COMPUTERS

(U)

THIS PROJECT HAS STUDIED SEVERAL ALTERNATE METHODS
FOR THE REALIZATION OF HIGH PERFORMANCE EMULATION.
HIGH PERFORMANCE OR REAL-TIME EMULATION OCCURS WHEN
A HOST MACHINE IS ABLE TO INTERPRET THE INSTRUCTIONS
OF ANOTHER MACHINE (CALLED THE IMAGE MACHINE) IN
THE SAME TIME AS THAT MACHINE WOULD HAVE EXECUTED THE
SAME SET OF INSTRUCTIONS. OCCASIONALLY SUCH
INTERPRETATION OCCURS AT AN EVEN FASTER RATE THAN THE
ORIGINAL IMAGE MACHINE. WE LABEL THIS PHENOMENON
HYPER-REAL-TIME EMULATION. SEVERAL ORGANIZATIONS
HAVE BEEN STUDIED AS WELL AS ORGANIZATIONAL
EXTENSIONS TO OUR PRESENT EMMY ORGANIZATION. THE
MOST PROMISING STRUCTURES THAT WE HAVE DEVELOPED ARE
EXTENSIBLE, OVER-LAPPED PROCESSORS. AN INDEPENDENT,
ORDER OF MAGNITUDE, PERFORMANCE IMPROVEMENT IS
AVAILABLE THROUGH OTHER TECHNIQUES CALLED DIRECTLY
EXECUTED LANGUAGES. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A025 292 9/2 5/2
DAVID W TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER
BETHESDA MD

GRAPH INFORMATION RETRIEVAL LANGUAGE;
PROGRAMMING MANUAL FOR FORTRAN COMPLEMENT.
REVISION ONE.

(U)

DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT REPT.,
FEB 76 59P BERKOWITZ, SIDNEY ;
REPT. NO. DTNSRDC-76-0085
PROJ: SR014-03
TASK: SR014-03-01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *PROGRAMMING MANUALS, *PROGRAMMING
LANGUAGES, *INFORMATION RETRIEVAL, GRAPHS, PATTERN
RECOGNITION, COMPUTATIONAL LINGUISTICS, SEMANTICS,
FORTRAN, SYNTAX, SCHEDULING, ASSOCIATIVE
PROCESSING, MEMORY DEVICES, COMPUTER FILES
IDENTIFIERS: *GIRL PROGRAMMING LANGUAGE,
ASSOCIATIVE MEMORIES

(U)

(U)

GIRL (GRAPH INFORMATION RETRIEVAL
LANGUAGE) IS A PROGRAMMING LANGUAGE DESIGNED TO
CONVENIENTLY MANIPULATE INFORMATION IN GRAPH
STRUCTURES. AS SUCH, THE LANGUAGE WILL PLAY A KEY
ROLE IN THE CONSTRUCTION OF THE ORGANIZATIONAL
SCHEMES FOUND, FOR EXAMPLE, IN INFORMATION RETRIEVAL,
PATTERN RECOGNITION PROBLEMS, LINGUISTIC ANALYSIS,
AND PROCESS SCHEDULING SYSTEMS. THE LANGUAGE IS
WRITTEN TO COMPLEMENT AN ALGEBRAIC LANGUAGE. IN THE
SENSE THAT GIRL STATEMENTS ARE DISTINGUISHED FROM
THE STATEMENTS OF THE ALGEBRAIC LANGUAGE AND THE
STATEMENTS MAY BE INTERLEAVED. THE PRIMARY
ADVANTAGE OF SEPARATING SYMBOLIC AND NUMERIC
STATEMENTS IS THAT THE PROGRAMMER IS AFFORDED A
LINEAR, ONE-ONE-TRACE OF GRAPH OPERATIONS IN THE CODE
DESCRIPTION. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZOM07

AD-A025 686 9/2 8/2
PRC INFORMATION SCIENCES CO MCLEAN VA

GRAPHIC LINE SYMBOLIZATION SYSTEM. VOLUME
1. SYSTEMS ANALYSIS AND DESIGN.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. SEP 73-APR 75,
MAR 76 93P BELL, PAUL D. INEUFFER, JOHN

A. TAYLOR, M. LYNN ;

CONTRACT: F30602-74-C-0027

PROJ: AF-3202

TASK: 320203

MONITOR: RADC TR-76-86-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-A025
687.

DESCRIPTORS: *COMPUTER GRAPHICS, *MAPPING, *DATA
PROCESSING, *SYMBOLS, *SYSTEMS ANALYSIS, DIGITAL
COMPUTERS, PLOTTING, INTERFACES, DIGITIZERS,
MEMORY DEVICES, BATCH PROCESSING, PROGRAMMING
LANGUAGES, LINES(GEOMETRY), COMPUTER PROGRAM
DOCUMENTATION, COMPUTER ARCHITECTURE

(U)

IDENTIFIERS: HIS 635 COMPUTERS, COMPUTER SOFTWARE,
DESIGN, AUTOMATIC MAPPING

(U)

THIS REPORT DOCUMENTS WORK PERFORMED IN THE
DEVELOPMENT OF A GRAPHIC LINE SYMBOLIZATION
SYSTEM (GLSS) FOR THE DEFENSE MAPPING
AGENCY-AEROSPACE CENTER. GLSS PROVIDES A WIDE
RANGE OF DATA PROCESSING CAPABILITIES RELATED TO
CARTOGRAPHIC SYMBOLOGY. THESE INCLUDE ALL LINEAL
SYMBOLS AND MANY POINT SYMBOLS TO SUPPORT AND
1:200,000 SERIES CHART PRODUCTION. THE SYSTEM
ALSO INCLUDES A NUMBER OF LINE CLEANING AND DATA
CULLING FUNCTIONS. THE SYSTEM HAS BEEN DESIGNED TO
BE HIGHLY FLEXIBLE AS TO INPUT/OUTPUT OPTIONS AND
SYMBOL SPECIFICATIONS BUILD, UPDATE AND OVERRIDE.
THE REPORT IS IN THREE VOLUMES: VOLUME 1 -
SYSTEM ANALYSIS AND DESIGN; VOLUME 2 -
SYSTEM IMPLEMENTATION, OPERATING PROCEDURES
AND TESTING; AND VOLUME 3 - PROGRAM
DOCUMENTATION.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A025 687 9/2 8/2
PRC INFORMATION SCIENCES CO MCLEAN VA

GRAPHIC LINE SYMBOLIZATION SYSTEM. VOLUME
II. SYSTEM IMPLEMENTATION, OPERATING
PROCEDURES AND TESTING.

(U)

DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. SEP 73-APR 75,
MAR 76 81P BELL, PAUL D. ; NEUFFER, JOHN

A. ; TAYLOR, M. LYNN ;
CONTRACT: F30602-74-C-0027
PROJ: AF-3202
TASK: 320203
MONITOR: RADDC TR-76-86-VOL-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *COMPUTER GRAPHICS, *MAPPING,
*OPERATIONAL TEST AND EVALUATION, *SYMBOLS, *DATA
PROCESSING, COMPUTER PROGRAMS, DIGITAL COMPUTERS,
LINES(GEOMETRY), MEMORY DEVICES, BATCH
PROCESSING, SPECIFICATIONS, MODES, COMPUTER FILES,
DATA PROCESSING EQUIPMENT
IDENTIFIERS: HIS 635 COMPUTERS

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THE PURPOSE OF VOLUME 2 OF THE FINAL
TECHNICAL REPORT IS TO DESCRIBE THE MAJOR
ATTRIBUTES OF THE SYSTEM IMPLEMENTATION, SYSTEM
OPERATING PROCEDURES, AND SUMMARY RESULTS OF SYSTEM
TESTING.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A025 888 9/2
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS

THE TERMINAL INTERFACE MESSAGE PROCESSOR
PROGRAM.

(U)

MAY 76 228P
REPT. NO. TECHNICAL INFORMATION-91
CONTRACT: DAHC15-69-C-0179, F08606-73-C-0027

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SUPERSEDES AD-A024 905.
SPONSORED IN PART BY CONTRACT F08606-75-C-0032.

DESCRIPTORS: *DATA PROCESSING TERMINALS, *COMPUTER
PROGRAMMING, MEMORY DEVICES, REAL TIME, MESSAGE
PROCESSING, SYNTAX, INTERFACES

(U)

IDENTIFIERS: COMPUTER NETWORKS, *INTERFACE MESSAGE
PROCESSORS, PROTOCOLS, COMPUTER SOFTWARE,
COMPUTER HARDWARE

(U)

CONTENTS: OVERVIEW OF THE TERMINAL IMP
HARDWARE; SOFTWARE SUMMARY; PERFORMANCE SUMMARY;
SUMMARY OF PROTOCOL DESIGN DECISIONS AND PROTOCOL
DEVIATIONS; REFERENCES AND TIP BIBLIOGRAPHY;
STORAGE LAYOUT; DATA STRUCTURES; DETAILED
SOFTWARE DESCRIPTION.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-A026 217 9/2
GENERAL ELECTRIC CORPORATE RESEARCH AND DEVELOPMENT
SCHENECTADY N Y

DESIGN, FABRICATION, AND EVALUATION OF AN
ELECTRON BEAM ADDRESSABLE HIGH INFORMATION
DENSITY MEMORY TUBE.

(U)

DESCRIPTIVE NOTE: INTERIM REPT. NO. 3, 1 SEP 75-31 JAN
76.

JUN 76 41P LEMMOND, C. Q. ; HUGHES, W.
C. ; KIRKPATRICK, C. G. ; BUSCHMANN, E. C. ;
GRUP, H. W. ;

REPT. NO. SRD-76-065
CONTRACT: DAAB07-75-C-1312
PROJ: DA-1-S-762705-AH-94-D
TASK: 1-S-762705-AH-94-D-205
MONITOR: ECOM 75-1312-3

UNCLASSIFIED REPORT

DESCRIPTORS: *MEMORY DEVICES, ELECTRON TUBES,
ELECTRON OPTICS, ELECTRON BEAMS, DATA RATE,
DIGITAL COMPUTERS

(U)

IDENTIFIERS: BORAM

(U)

ELECTRON OPTICAL COMPONENT IMPROVEMENTS WERE MADE
TO SIMPLIFY THE TUBE CONSTRUCTION AND AS FIRST STEPS
TOWARD RUGGEDIZING THE TUBE. THESE MODIFICATIONS
WERE THOROUGHLY TESTED, AND THE RESULTS INDICATE
EXTREMELY STABLE BEAM CONTROL AS WELL AS A DESIGN
THAT CAN MORE EASILY BE MADE RUGGED. TESTS TO
VERIFY TUBE OPERATION CAPABILITY AT 10 MEGABIT DATA
RATES WERE SUCCESSFULLY COMPLETED. STORAGE TARGET
IMPROVEMENTS CONTINUE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL No. /ZOM07

AD-B001 372 9/2 17/2.1
NAVAL SURFACE WEAPONS CENTER DAHLGREN LAB VA

INITIAL SOFTWARE FOR EMPASS EP-3A DIGITAL
SYSTEM.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JAN 75 41P CAMPBELL, ALICE J. ; PALMER,
BENNETT S. ;
REPT. NO. NSWC/DL-TR-3212

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA ACQUISITION, *SIGNAL
PROCESSING), (*RADIO RECEIVERS, *COMPUTER
PROGRAMS), (*RADIO SIGNALS, *DATA STORAGE
SYSTEMS), TIME SHARING, INFORMATION, SEARCHING,
INTERROGATION, INFORMATION RETRIEVAL, DATA
PROCESSING, DIGITAL COMPUTERS, MAGNETIC TAPE,
DIGITAL RECORDING SYSTEMS, NAVIGATION, NAVAL
AIRCRAFT, DATA BASES, INPUT OUTPUT PROCESSING,
DATA PROCESSING EQUIPMENT, REAL TIME, TELEVISION
DISPLAY SYSTEMS, GRAPHICS, OPERATORS (PERSONNEL),
REMOTE TERMINALS, ERRORS, ON LINE SYSTEMS,
TACTICAL ANALYSES, AIRBORNE, NAVIGATION COMPUTERS,
DATA TRANSMISSION SYSTEMS, ELECTRONIC AIRCRAFT
IDENTIFIERS: UNIVAC 1830A COMPUTERS,
EMPASS (ELECTROMAGNETIC PERFORMANCE OF AIR AND SHIP
SYSTEMS), ELECTROMAGNETIC PERFORMANCE OF AIR AND
SHIP SYSTEMS, CDC 6700 COMPUTERS, EP-3A
AIRCRAFT, P-3 AIRCRAFT

(U)

(U)

A DIGITAL SYSTEM DEVELOPED TO SUPPORT THE
ELECTROMAGNETIC PERFORMANCE OF AIR AND SHIP
SYSTEMS (EMPASS) PROJECT AS NSWC/DL IS
REPORTED. THE AIRBORNE SYSTEM CONSISTS OF RF
RECEIVERS AND ANTENNAS WITH SPECIAL RELAYS AND
INTERFACE UNITS WHICH ALLOW A UNIVAC 1830A
COMPUTER TO INTERROGATE AND CONTROL THEM. AIRCRAFT
POSITION, RF SIGNAL, AND SYSTEM STATUS MEASUREMENTS
ARE RECORDED DIGITALLY ON MAGNETIC TAPE WHILE
OPERATOR DISPLAYS ARE PROVIDED FOR SOME IMMEDIATE
DATA ANALYSIS AND SYSTEM MONITORING. THE SOFTWARE
FOR THIS DATA ACQUISITION SYSTEM WAS DESIGNED AND
DEVELOPED AT NSWC/DL AND IS CURRENTLY BEING USED
ON TEST AND MEASUREMENT MISSIONS OF THE EMPASS
AIRCRAFT. (AUTHOR)

(U)

UNCLASSIFIED

CORPORATE AUTHOR - MONITORING AGENCY

<p>•AEROSPACE CORP EL SEGUNDO CALIF ENGINEERING SCIENCE OPERATIONS ••• TR-0075(5112)-7 MICROPROCESSORS AND MICROCOMPUTERS. (SAMSO-TR-75-206) AD-A014 823</p>	<p>AFAL-TR-72-82 AEROSPACE MULTIPROCESSOR EXECUTIVE. AD- 900 282 ••• AFAL-TR-72-362 PLASMA ANODIZATION. AD- 760 171 ••• AFAL-TR-73-31 SURVIVABLE P-CHANNEL METAL- OXIDE-SEMICONDUCTOR (PMOS) COMPUTER DESIGN. AD- 759 189 ••• AFAL-TR-75-80 DISTRIBUTED PROCESSOR/MEMORY ARCHITECTURES DESIGN PROGRAM. AD-A016 482</p>	<p>PATTERSON AFB OHIO ••• AFML-TR-75-12 EXPLORATORY DEVELOPMENT OF MAGNETIC BUBBLE DOMAIN MATERIAL FOR APPLICATION IN AIR FORCE SOLID STATE MASS MEMORY SYSTEMS. AD-A014 364</p>
<p>•AEROSPACE MEDICAL RESEARCH LAB WRIGHT- PATTERSON AFB OHIO ••• AMRL-HESS-76-2 PROGRAM DOCUMENTATION FOR THE VOLTSCAN PROGRAM, AD-A021 919 ••• AMRL-TR-76-13 PROGRAM DOCUMENTATION FOR THE VOLTSCAN PROGRAM, AD-A021 919</p>	<p>•AIR FORCE CAMBRIDGE RESEARCH LABS HANSCOM AFB MASS ••• AFCL-72-0698 GRAPPAC: A PACKAGE OF FORTRAN SUBROUTINES FOR USE WITH THE 6000 SERIES 274 INTERACTIVE GRAPHICS SYSTEM OF THE CONTROL DATA CORPORATION, AD- 755 395 ••• AFCL-TR-73-0175 RESEARCH IN FERROMAGNETICS: DOMAIN TIP DEVICES. AD- 763 086 ••• AFCL-TR-75-0037 EFFECTS OF NUCLEAR RADIATION ON MAGNETIC BUBBLE DOMAIN MATERIALS AND DEVICES. AD-A011 702</p>	<p>•AIR FORCE OFFICE OF SCIENTIFIC RESEARCH BOLLING AFB D C ••• AFOSR-TR-72-1911 SOME DIAGNOSTIC APPROACHES FOR COMPUTER SYSTEM DESIGN. AD- 758 243 ••• AFOSR-TR-72-1952 SEQUENCING STRATEGIES IN PIPELINE COMPUTER SYSTEMS. AD- 756 475 ••• AFOSR-TR-72-2014 IMPROVEMENT IN A SYSTEM'S THROUGHPUT--FROM THE STANDPOINT OF FILE ORGANIZATION AND SEARCHING STRATEGIES. AD- 757 495 ••• AFOSR-TR-73-0682 OPTIMAL SQUARE-ROOTING ALGORITHMS FOR HARDWARE IMPLEMENTATION. AD- 759 545 ••• AFOSR-TR-74-0010 MEMORY-USE ESTIMATOR FUNCTION OF A PROGRAM EXECUTING IN PAGING ENVIRONMENT, AD- 772 415 ••• AFOSR-TR-74-1773 A NEW APPROACH TO THE REALIZATION OF NONRECURSIVE DIGITAL FILTERS. AD-A001 953 ••• AFOSR-TR-74-1898 SOME NEW REALIZATIONS OF DEDICATED HARDWARE DIGITAL SIGNAL PROCESSORS.</p>
<p>•AEROSPACE RESEARCH LABS WRIGHT- PATTERSON AFB OHIO ••• ARL-75-0031 SWITCHING AND MEMORY EFFECTS IN PHOSPHORUS-ION-IMPLANTED ZNSE DEVICES. AD-A007 759</p>	<p>•AIR FORCE AERO PROPULSION LAB WRIGHT- PATTERSON AFB OHIO ••• AFAPL-TR-75-31 A CDC 6600-BASED CROSS- ASSEMBLER FOR THE HP2114 MINICOMPUTER. AD-A015 033</p>	<p>•AIR FORCE ARMAMENT LAB EGLIN AFB FLA ••• AFATL-TR-73-147 A COMPUTER PROGRAM FOR EXTRACTING AERODYNAMIC DATA FROM MAGNETIC TAPE. AD- 912 646</p>
<p>•AIR FORCE AVIONICS LAB WRIGHT- PATTERSON AFB OHIO •••</p>	<p>•AIR FORCE MATERIALS LAB WRIGHT- PATTERSON AFB OHIO •••</p>	<p>AD- 912 646</p>

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USACSC-AT-74-06-VOL-1
MULTICOMMAND NETWORKS PROJECTS
FOR THE U.S. ARMY COMPUTER SYSTEMS
COMMAND. VOLUME I. SURVEY PLAN FOR
SELECTED ARMY DATA PROCESSING
INSTALLATIONS.
AD-A003 253

USACSC-AT-75-03
AN ALGORITHM FOR BLOCKING
FACTOR OPTIMIZATION.
AD-A013 829

USACSC-AT-75-07
RESEARCH INTO THE DEVELOPMENT
OF A LOW-COST HARDWARE MONITOR.
AD-A016 951

*ARMY ELECTRONICS COMMAND FORT
MONMOUTH N J

ECON-0058-61
A CLASS OF OPERATIONS SUITABLE
FOR FRACTIONAL-SIZE ASSOCIATIVE
MEMORIES.
AD- 753 403

ECON-73-0306-F
LONG TERM MEMORY IN JUNCTION
DEVICES USING MULTIVALENT TRAPPING
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AD-A018 213

ECON-75-1312-3
DESIGN, FABRICATION, AND
EVALUATION OF AN ELECTRON BEAM
ADDRESSABLE HIGH INFORMATION
DENSITY MEMORY TUBE.
AD-A026 217

ECON-0098-72-F
DESIGN, FABRICATION, AND
EVALUATION OF AN ELECTRON BEAM
ADDRESSABLE HIGH INFORMATION
DENSITY MEMORY TUBE.
AD-A002 694

ECON-0258-3
SINGLE CRYSTAL CYLINDRICAL
MAGNETIC DOMAIN MATERIALS FOR
MEMORY APPLICATIONS.

DIGITAL STORAGE.
AD-A023 387

AFOSR-TR-76-0541
FEASIBILITY OF REAL TIME
EMULATION.
AD-A025 206

AFOSR-TR-76-0599
COPYING LIST STRUCTURES WITHOUT
AUXILIARY STORAGE.
AD-A025 173

AFOSR-TR-76-0603
AN APPROACH TO GLOBAL REGISTER
ALLOCATION.
AD-A024 966

*AIR FORCE WEAPONS LAB KIRTLAND AFB N
MEX

AFWL-TR-73-115
PLATED-WIRE MEMORY STATE-OF-THE-
ART STUDY (1972).
AD- 911 659

AFWL-TR-74-209
DESIGN AND FABRICATION OF
RADIATION-HARDENED MNOS MEMORY
ARRAY.
AD-A021 421

*APPLIED DATA RESEARCH INC WAKEFIELD
MASS

CADO-7208-1411-VOL-2
COMPILER DESIGN FOR THE ILLIAC
IV. VOLUME II.
(AROD-9187-6-A)
AD- 748 226

*ARMY AUDIT AGENCY WASHINGTON D C

AUDIT: ARMY UNIFORM DATA
INQUIRY TECHNIQUE - COMPUTER
PROGRAMS.
AD- 777 100

*ARMY COMPUTER SYSTEMS COMMAND FORT
BELVOIR VA

AFOSR-TR-75-0036
ON THE IMPLEMENTATION OF A
PHYSICAL DATA MODEL FOR
TRANSLATION.
AD-A003 737

AFOSR-TR-75-0038
A DATA DESCRIPTION LANGUAGE
APPROACH TO FILE TRANSLATION.
AD-A003 715

AFOSR-TR-75-0132
A MEMORY-PROCESS MODEL OF
SYMBOLIC ASSIMILATION.
AD-A004 331

AFOSR-TR-75-0196
THE OPTIMAL SELECTION OF
SECONDARY INDICES FOR FILES.
AD-A005 692

AFOSR-TR-75-1265
A NEW HARDWARE REALIZATION OF
DIGITAL FILTERS.
AD-A015 112

AFOSR-TR-75-1675
SEMANIC MODELS FOR PARALLEL
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AD-A019 661

AFOSR-TR-76-0016
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AD-A021 148

AFOSR-TR-76-0018
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AD-A020 746

AFOSR-TR-76-0190
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AFOSR-TR-76-0428
A REVIEW AND PROJECTION OF
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ARM-BOL

AD- 749 267
ECOM-0258-4-70
SINGLE CRYSTAL CYLINDRICAL
MAGNETIC DOMAIN MATERIALS FOR
MEMORY APPLICATIONS.
AD- 763 224
ECOM-0344-F-71
DIGITAL INTERFACE CODE
CONVERTER.
AD- 908 524
ECOM-1312-1-75
DESIGN, FABRICATION, AND
EVALUATION OF AN ELECTRON BEAM
ADDRESSABLE HIGH INFORMATION
DENSITY MEMORY TUBE.
AD-A016 940

•ARMY ENGINEER TOPOGRAPHIC LABS FORT
BELVOIR VA
ETL-0003
A SYSTEM FOR TOPOGRAPHIC
INQUIRY NO. 2 ALPHANUMERIC
SUBSYSTEM.
AD-A008 012
ETL-0004
A SYSTEM FOR TOPOGRAPHIC
INQUIRY. NO. 3. ALPHANUMERIC
SUBSYSTEM DATA BASE LISTING.
AD-A007 739
ETL-ETR-74-2
A SYSTEM FOR TOPOGRAPHIC
INQUIRY. NUMBER 1. MICROGRAPHIC
SUBSYSTEM.
AD- 923 480

•ARMY FOREIGN SCIENCE AND TECHNOLOGY
CENTER CHARLOTTEVILLE VA
FSTC-HC-23-346-74
BRANCHED CORE LOGIC ELEMENTS,
AD- 786 842
FSTC-HT-23-0458-74
CERTAIN PROBLEMS IN THE
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DEVICES FOR INFORMATION STORAGE AND
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AD-A000 242
FSTC-HT-23-1823-73
A BINARY OUTPUT ELEMENT FOR
LOGICAL AND SWITCHING DEVICES ON
FERROMAGNETIC SINGLE CRYSTALS,
AD-A000 226
FSTC-HT-23-2015-72
PROBLEMS OF LASER BEAM DATA
TRANSMISSION, PROCEEDINGS OF THE
FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1968,
AD- 753 944

•ARMY MOBILITY EQUIPMENT RESEARCH AND
DEVELOPMENT CENTER FORT BELVOIR VA
USAMERC-2033
SOURCE TEXT EDITOR FOR THE
VARIAN DATA 620.
AD- 750 605

•ARMY RESEARCH OFFICE RESEARCH
TRIANGLE PARK N C
ARO-5718-14-EL
EXTRACTION OF DERIVATIVES FROM
DATA STORED IN AN ACOUSTIC MEMORY,
AD-A019 059
ARO-8803-15-EL
OPTIMAL CONTROL OF DEMAND-
PAGING SYSTEMS,
AD-A011 800
ARO-10197-7-EL
DISTINGUISHABLE CODEWORD SETS
FOR SHARED MEMORY,
AD-A015 498
AROD-8803-17-RT
AN INVESTIGATION OF COMPUTER
SYSTEMS PROBLEMS.
AD- 779 452
AROD-9187-6-A
COMPILER DESIGN FOR THE ILLIAC
IV. VOLUME II.

AD- 748 226
AROD-9187-8-A
COMPILER DESIGN FOR THE ILLIAC
IV.
AD- 756 729
AROD-9816-2-A
NETWORK DATA HANDLING SYSTEM.
AD- 757 686

•ASSISTANT SECRETARY OF DEFENSE
(MANPOWER AND RESERVE AFFAIRS)
WASHINGTON D C
OSAD/MRA-CODAP-73
COMPREHENSIVE OCCUPATIONAL DATA
ANALYSIS PROGRAM (CODAP),
AD- 773 233

•AUERBACH CORP PHILADELPHIA PA
DM-1 IMPLEMENTATION.
(RADC-TR-73-68)
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• . . .

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